

ZXR10 5950-L Series

Full Gigabit Intelligent Routing Switches Datasheet

ZTE

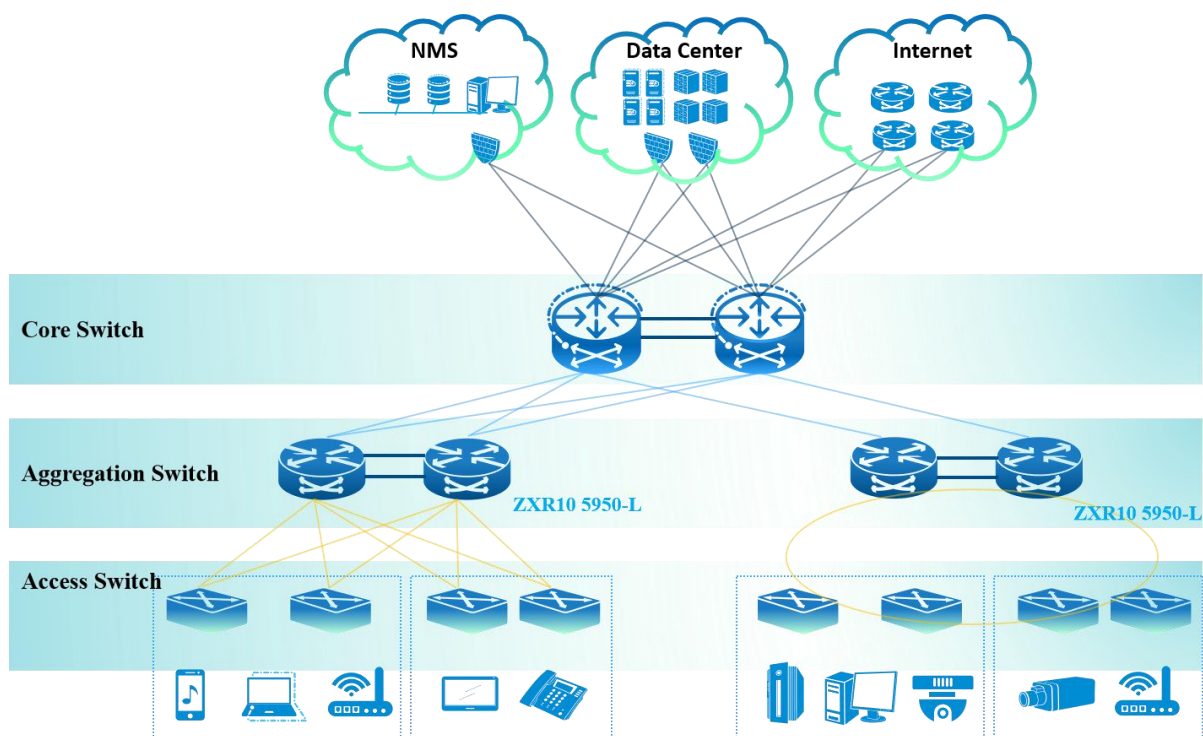
Overview

The ZXR10 5950-L Series is a family of full gigabit intelligent routing switches developed by ZTE to implement secure IP switching, all-GE networking, and QoS assurances. The series supports a wide range of IPv4 and IPv6 routing protocols, VLAN control, all-GE traffic switching, QoS assurance, traffic limiting, 802.1X authentication, virus protection, as well as comprehensive service control and user management capabilities. Thanks to these intelligent features, the series can serve as L3 all-GE aggregation switches in office networks, campus networks, and networks that have high requirements for service management and network security assurance.



Application Scenarios

The ZXR10 5950-L Series supports VSC2.0 and PoE/PoE+. It can be applied in multiple scenarios including campus/SME access and aggregation. Below is an example of using the switches to provide access in a campus application.





Highlights

➤ Powerful Service Transmission Capability

Transmitting multiple services including WLAN, Internet, voice, video and other data services

- By supporting rich L2 switching and L3 routing functions as well as low latency forwarding, the ZXR10 5950-L Series can carry multiple services including WLAN, Internet, voice, video and other data services.
- Comprehensive L2/L3 multicast protocols including PIM-SM, PIM-DM, PIM-SSM, MLD, IGMP snooping, filtering, proxy, fast leave, and MVR (Multicast VLAN Registration) to facilitate the deployment of these services. With IPTV control, operators can apply different CAC (Channel Access Control) rules for users of packages.
- PoE/PoE+ enables more service access scenarios.

➤ Innovative VSC2.0 (Virtual Switch Cluster) Technology

Enhancing cluster system capacity and port density to simplify network topology and management

- Real-time hot-standby information synchronization between master and backup switches can ensure seamless switchover to prevent network failures and enhance network reliability.
- Real-time non-blocked and stacked bandwidth reaches 80Gbps to eliminate bandwidth bottlenecks between VSC systems.
- The high reliability of N+1 backup ensures no cluster system fault will be caused by a single device, thus reducing service interruption. The Multi-Active Detection (MAD) technology ensures that there are not two masters in the network when the VSC is split. Together with real-time hot-standby information synchronization and seamless switchover, the MAD technology enable a more elastic VSC network.

➤ Comprehensive IPv6 Features

Supporting IPv6 unicast routing protocols and IPv4-to-IPv6 tunnel technologies

- Rich IPv6 unicast routing protocols (IPv6 static routing, RIPng, OSPFv3, IS-ISv6, and BGP4+) and multicast features (MLD v1/v2, MLD snooping, PIMv6, etc.)
- Rich IPv4-to-IPv6 tunnel technologies: IPv6 manual tunnel, 6-to-4 tunnel, ISATAP tunnel, IPv4-compatible automatic tunnel, etc.



➤ Flexible PoE/PoE+

Providing power for remote devices

- Ethernet power supply complies with 802.3af (PoE) and 802.3at (PoE+) standards. It is used to provide power for remote devices (including IP phones, WLAN APs, and network cameras) through twisted-pair cables.
- Forced power supply functions are compatible with Powered Devices (PDs) that do not comply with 802.3af and 802.3at standards.
- Support assigning time periods for PoE. In time periods when power output is not needed, the PoE function can be turned off to save energy.
- PD port power detection. If the actual power is greater than the PSE-distributed power, power supply is stopped.
- The power supply status of both PSE and PD, such as whether power is being supplied, power level, priority and temperature, can be checked in real time.

➤ Enhanced Reliability and Multi-Dimensional Security

Enabling fast system recovery from any link or node fault

- Support the smart Ethernet ring protection function, which complies with RFC3619 and ITU.T G.8032 standards. The function can be implemented in both closed-ring and open-ring topologies. Multiple instances can be configured to realize load-balancing. The switchover time can be kept below 50ms.
- Various authentication methods such as 802.1x, Radius, and TACACS+.
- CPU overload protection and DDoS prevention guarantee a secure network.

➤ Low OPEX and Green Design

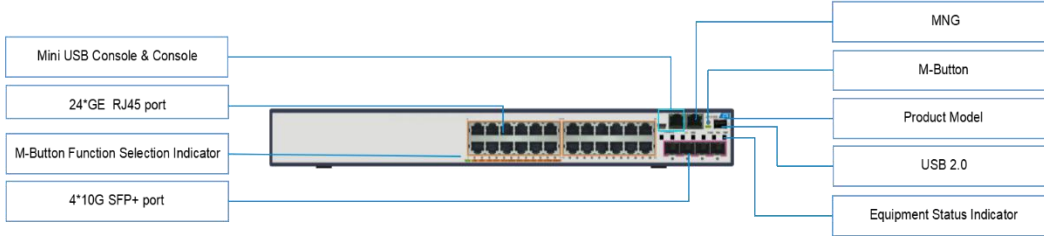
Instant troubleshooting by reading indicators on the front panel without login via a terminal

- The innovative M-Button function allows for instant troubleshooting and minimizes OPEX.
- IEEE 802.3az EEE (Energy Efficient Ethernet). Via chip-level power management, ports can automatically sleep when there is no traffic.
- Dynamic fan adjustment technology. The fan speed can be automatically adjusted within 5 levels according to the temperature inside the switch. This not only reduces power consumption, cuts noise and extends the life cycle of the fans.
- Comply with ROHS, WEEE and ISO14001 certifications. No plumbum (Pb) in all the product materials and the whole production process. Recyclable and degradable packing materials.



Physical Interfaces and Structure

ZXR10 5950-28TD-L: 28-Port Full Gigabit Intelligent Routing Switch

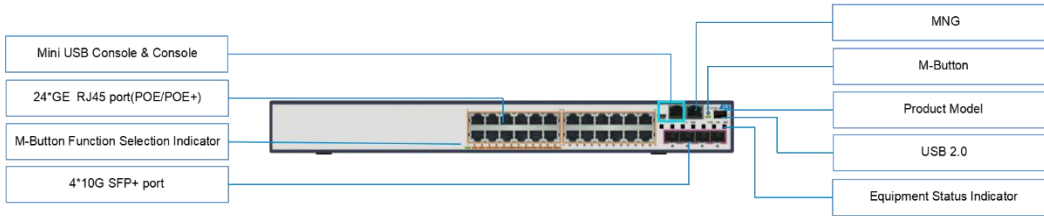


ZXR10 5950-28TD-L Front View



Side-to-Side Airflow

ZXR10 5950-28PD-L: 28-Port Full Gigabit Intelligent Routing Switch

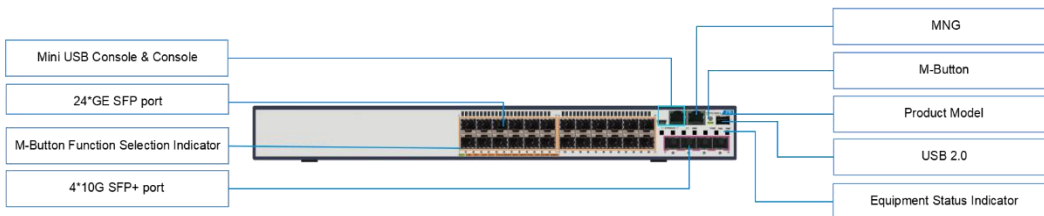


ZXR10 5950-28PD-L Front View



Side-to-Back Airflow

ZXR10 5950-28SD-L: 28-Port Full Gigabit Intelligent Routing Switch

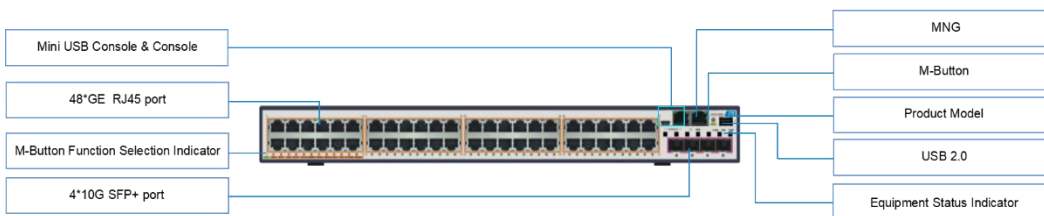


ZXR10 5950-28SD-L Front View

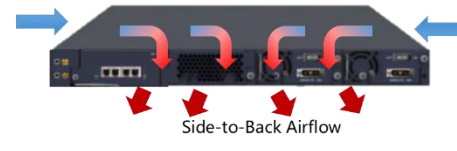


Side-to-Back Airflow

ZXR10 5950-52TD-L: 52-Port Full Gigabit Intelligent Routing Switch

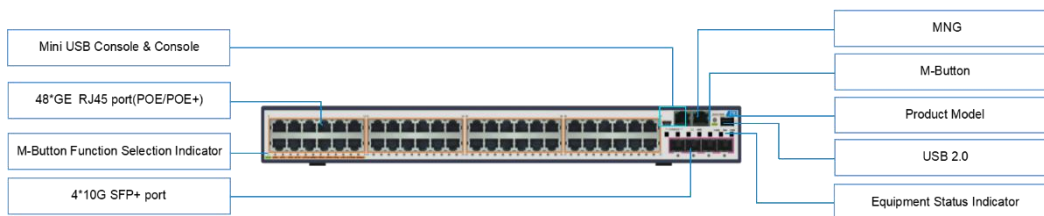


ZXR10 5950-52TD-L Front View



Side-to-Back Airflow

ZXR10 5950-52PD-L: 52-Port Full Gigabit Intelligent Routing Switch



ZXR10 5950-52PD-L Front View



Side-to-Back Airflow



Technical Specifications - Physical

	5950-28TD-L	5950-52TD-L	5950-28PD-L	5950-52PD-L	5950-28SD-L
Fixed Port	24*GE RJ45+ 4*10GE SFP+	48*GE RJ45+ 4*10GE SFP+	24*GE RJ45 (POE/POE+) + 4*10GE SFP+	48*GE RJ45 (POE/POE+) + 4*10GE SFP+	24*GE SFP+ 4*10GE SFP+
Expansion Card	NA				
Management Port	1 GE MNG, 1 RJ45 Console, 1 Mini USB Console				
Maximum Weight in Full Configuration	6.2kg	6.7kg	7.7kg	7.8kg	7.5kg
Dimensions (H*W* D) mm	43.6x442x440				
Power Type	AC 1+1 / DC 1+1 / HVDC 1+1				
AC Power Supply	Rated voltages: 100V-240V, 50Hz-60Hz Maximum voltages: 90V-286V, 45Hz-66Hz				
DC Power Supply	-48V±20%				
HVDC Power Supply	240V/336V	240V/336V	240V/336V	240V/336V	240V/336V
Redundant Power Input	Y	Y	Y	Y	Y
Dying Gasp (AC Power)	Y	Y	Y	Y	Y
Max Consumption	70W	84W	800W (PoE: 720W)	1050W (PoE: 960 W)	76W
Typical Power Consumption	30W	39W	42W	49W	38W
Sactive/Standby Redundancy and Switchover	Y	Y	Y	Y	Y
Operating Temperature	-10°C to +55°C (short-term); -10°C to +50°C (long-term)				
Storage Temperature	-45°C to +70°C				
Relative Humidity (Non-condensing)	5% - 95%				
Lightning Protection Circuit Design	Y	Y	Y	Y	Y
Hot Swapping	Y	Y	Y	Y	Y
MTBF/MTTR	>400,000 hours/<30 minutes				
Working Altitude	2KM	5KM	2KM	2KM	2KM



Technical Specification-Performance

	5950-28TD-L	5950-52TD-L	5950-28PD-L	5950-52PD-L	5950-28SD-L
CPU Frequency	Dual-core 800MHz	Dual-core 800MHz	Dual-core 800MHz	Dual-core 800MHz	Dual-core 800MHz
Memory Size	2G Bytes	2G Bytes	2G Bytes	2G Bytes	2G Bytes
Flash Size	512 MBytes	512 MBytes	512 MBytes	512 MBytes	512 MBytes
Switching Capacity	128Gbps	176Gbps	128Gbps	176Gbps	128Gbps
Packet Forwarding Rate	96Mpps	132Mpps	96Mpps	132Mpps	96Mpps
MAC Table	16K				
Host Routing Table Capacity	32K/32K (IPv4/IPv6)	Host routing table capacity	32K/32K (IPv4/IPv6)	Host routing table capacity	32K/32K (IPv4/IPv6)
Subnetwork Routing Table Capacity	10K/3K (IPv4/IPv6)	Subnetwork routing table capacity	10K/3K (IPv4/IPv6)	Subnetwork routing table capacity	10K/3K (IPv4/IPv6)
VLAN	4K	4K	4K	4K	4K
Packet Buffering Capacity	1.5M	1.5M	1.5M	1.5M	1.5M
Number of Community Ports	16/pvlan	16/pvlan	16/pvlan	16/pvlan	16/pvlan
Queue-Based Maximum Bandwidth Guarantee	Y	Y	Y	Y	Y
Port Bandwidth Limit	Y	Y	Y	Y	Y
Number of PVLANS	256	256	256	256	256
ACL-Based SVLAN	Y	Y	Y	Y	Y
QoS and ACL Policies for SVLAN-Enabled Port	Y	Y	Y	Y	Y
ACL Filtering for Multicast Traffic	Y	Y	Y	Y	Y
Rate Limiting Error (Accuracy)	<5%	<5%	<5%	<5%	<5%
Rate Limiting Granularity of Ingress Port	1G:10kbps 10G:100kbps	1G:10kbps 10G:100kbps	1G:10kbps 10G:100kbps	1G:10kbps 10G:100kbps	1G:10kbps 10G:100kbps
Number of QoS Queues	8/PORT	8/PORT	8/PORT	8/PORT	8/PORT
IEEE 802.3x Full-Duplex Traffic Control Protocol	Y	Y	Y	Y	Y
Number of ARP Entries(Static/Dynamic)	8K	8K	8K	8K	8K
Number of Permanent ARP Entries	5K	5K	5K	5K	5K
Route Entry	10k/3k(IPv4/IPv6)	10k/3k(IPv4/IPv6)	10k/3k(IPv4/IPv6)	10k/3k(IPv4/IPv6)	10k/3k(IPv4/IPv6)



Service Specification

Function	The ZXR10 5950-L Series Switch
L2 Features	<ul style="list-style-type: none"> • IEEE 802.1p (COS) and IEEE 802.1q (VLAN); • IEEE 802.1d (STP)/ 802.1w (RSTP)/ 802.1s (MSTP); • IEEE 802.3ad (LACP); • IEEE 802.3z (1000Base-X) / 802.3ab (1000BaseT); • IEEE 802.3ae (10Gbase); • IEEE 802.3ba (40Gbase); • QinQ, Selective QinQ; • Port mirroring and traffic mirroring; • PVLAN; • GVRP; • LLDP
L3 Features	<ul style="list-style-type: none"> • IPv4 routing protocols, such as static routing, policy based routing, RIP, OSPF, BGP, and IS-IS; • DHCP server/ relay/proxy, DHCP snooping; • IPv6 routing protocols, such as static routing, policy based routing, RIPng, OSPFv3, IS-ISv6, and BGP4+
Multicast	<ul style="list-style-type: none"> • IGMP v1/v2/v3, IGMPv1/v2/v3 snooping; • PIM-SM, PIM-DM, PIM-SSM; • Administratively scoped multicast/ IPTV, MVR; • MLD v1/v2, MLD snooping, PIMv6
QoS	<ul style="list-style-type: none"> • Traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority; • 8 hardware-based queues per port; • Queue scheduling algorithms, such as SP, WRR, DWRR, SP+WRR; • Congestion avoidance mechanisms, such as WRED and tail drop; • Support policing/shaping based on port
PoE	<ul style="list-style-type: none"> • PoE (IEEE 802.3 af); • PoE+ (IEEE 802.3 at)
Security	<ul style="list-style-type: none"> • L2-L4 ACL; • Standard ACL, MAC ACL, L2 ACL, extended ACL, mixed ACL, VLAN ACL; • Time-period ACL configuration, bidirectional ACL; • 802.1x authentication and 802.1x server; • MAC authentication; AAA/ RADIUS and TACACS+ authentication for login users; • SSH v1.0/v2.0 server; CPU anti-attack; • STP root guard, BPDU GUARD; • URPF; • RIP/OSPF/BGP MD5 encryption checking
Reliability	<ul style="list-style-type: none"> • 1+1 redundancy power supply; • Hot plugging; • LACP support ZESR/ZESR+ (ZTE Ethernet Switch Ring); • ERPS; • VRRP, VRRPv3, VRRPE; • GR for OSPF/BGP/IS-IS
Device Management	<ul style="list-style-type: none"> • CLI, Telnet, SSH, Local and remote (Radius/Tacacs+) authentication of user; • SNMP v1/v2/v3; • Mirroring; • RMON; • Support NTP; • Syslog, sFlow
Enhanced Features	<ul style="list-style-type: none"> • M-BUTTON; • Zero-touch deployment



Ordering Information

• Mainframes

ZXR10 5950-28TD-L	ZXR10 5950-28TD-L Switch (2*Power Supply Module)
ZXR10 5950-52TD-L	ZXR10 5950-52TD-L Switch (2*Power Supply Module)
ZXR10 5950-28PD-L	ZXR10 5950-28PD-LSwitch (1* Fan Module, 2*Power Supply Module) (PoE/PoE+)
ZXR10 5950-52PD-L	ZXR10 5950-52PD-L Switch (1* Fan Module, 2*Power Supply Module) (PoE/PoE+)
ZXR10 5950-28SD-L	ZXR10 5950-28SD-L Switch(1* Fan Module, 2*Power Supply Module)

• Power Modules

59-PWR-AC50	ZXR10 5950-PD-L AC/HVDC Power Module
59-PWR-DC50	ZXR10 5950-PD-L DC Power Module
59-PWR-AC20	ZXR10 5950-SD-L AC/HVDC Power Module
59-PWR-DC20	ZXR10 5950-SD-L DC Power Module
59-PWR-AC10	ZXR10 5950-TD-L AC/HVDC Power Module
59-PWR-DC10	ZXR10 5950-TD-L DC Power Module

• Fan Module

59-FAN	ZXR10 5950 Fan Module
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