ZTE ZXR10 5950-L Series Switch Data Sheet

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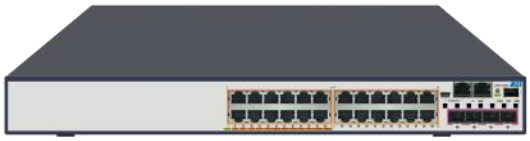
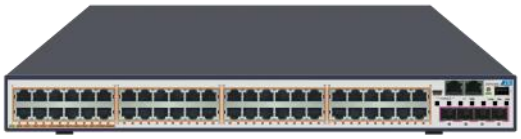
Product Overview

The ZXR10 5950-L Series switch is 1RU height all gigabit routing stackable switch for carrier access and aggregation scenarios. It provides up to 52 interfaces (48 GE+ 4 10GE). With VSC2.0 (Virtual Switch Cluster), it delivers improved resilience and flexibility. The ZXR10 5950-L Series switch supports full IEEE 802.3at Power over Ethernet Plus (PoE+) to fulfill more carrier access scenarios. Zero-touch provisioning, IEEE 802.3az Energy Efficient Ethernet (EEE) make the network not only easy for maintenance but also low consumption.

The ZXR10 5950-L Series switch offers the following switch products:



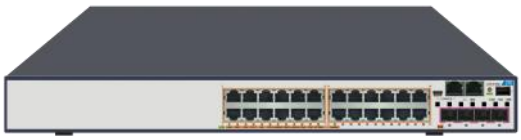
5950-28TD-L



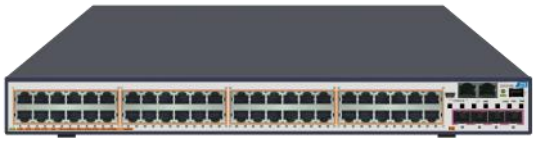
5950-52TD-L

5950-28TD-L: 24 Ethernet 10/100/1000M RJ45 electrical ports, 4 10GE SFP+ optical ports, 2 AC/DC power supply modules.

5950-52TD-L: 48 Ethernet 10/100/1000M RJ45 electrical ports, 4 10GE SFP+ optical ports, 2 AC/DC power supply modules.



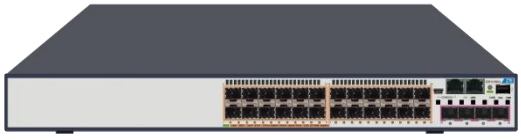
5950-28PD-L



5950-52PD-L

5950-28PD-L: 24 Ethernet 10/100/1000M RJ45 electrical ports (POE/POE+), 4 10GE SFP+ optical ports, 1 Fan Module, 2 AC/DC/HVDC power supply modules.

5950-52PD-L: 48 Ethernet 10/100/1000M RJ45 electrical ports (POE/POE+), 4 10GE SFP+ optical ports, 1 Fan Module, 2 AC/DC/HVDC power supply modules.



5950-28SD-L

5950-28SD-L: 24 GE SFP optical ports, 4 10GE SFP+ optical ports, 1 Fan Module, 2 AC/DC/ HVDC power supply modules.

Product Features

- **Powerful Service Bearing Capability**
  - By supporting rich L2 switching and L3 routing functions and low latency forwarding, The ZXR10 5950-L Series switch can bear multiservice including WLAN, Internet, Voice, Video and other data services.
  - The ZXR10 5950-L Series switch supports comprehensive L2/L3 Multicast protocols: PIM-SM, PIM-DM, PIM-SSM, MLD, IGMP Snooping, Filtering, Proxy and Fast leave, MVR (Multicast VLAN Registration) to facilitate the deployments of these services. With IPTV control implemented, operators can apply different CAC (channel access control) rules for users with channel packages.
  - Support POE/POE+, which delivers customer more flexible service access choice.
  - Flexible hardware forwarding table distribution, customers can configure the size of ARP table, MAC table according to actual need, to satisfy more application scenarios.

- **Innovative VSC2.0 (Virtual Switch Cluster) Technology**
  - Support VSC2.0 (Virtual Switch Cluster), which enhances cluster system capacity and port density, simplifies network topology and management.
  - Real time hot-standby information synchronization between master and backup master to ensure seamless switchover against network failures, enhancing the network reliability.
  - Stacking bandwidth between the VSC switches can be up to 80Gbps, which can solve the bandwidth bottleneck of VSC and deliver customers a real-time non-blocking VSC system.
  - Master and slave in VSC works in 1+N redundancy mode, MAD (Multi-active Detect) technology is used to detect and avoid dual master in VSC system when failure happens. Together with real-time hot-standby and seamless switchover it brings customer a more flexible VSC network.
  - Fast stacking convergence <300ms (milliseconds).

- **Comprehensive IPv6 Features**
  - Support rich IPv6 unicast routing protocols: IPv6 static routing, RIPng, OSPFv3, IS-ISv6, and BGP4+ and multicast features: MLD v1/v2, MLD snooping, PIMv6,etc.
  - Support rich IPv4-to-IPv6 tunnel technologies: IPv6 manual tunnels, 6-to-4 tunnel, ISATAP tunnel and IPv4-compatible automatic tunnels, etc.
- **Flexible POE/POE+**
  - Support POE and POE+ complying with the 802.3at and 802.3af standard to provide power supply for remote devices (including IP phones, WLAN APs, and network cameras) through twisted-pair cables.
  - Support forcible power supply and could supply power for PD equipments that not compatible with 802.3af and 802.3at standards if needed.
  - Support configuring the POE time range. During the time that doesn't need power supply, power supply can be stopped automatically to save energy.
  - Support PD port power detection. If the actual power is greater than the PSE-distributed power, stops providing power supply.
  - Support displaying the PSE power supply status and PD power supply status, such as whether power supply is provided, power, level, and temperature.
- **Carrier-Class Reliability, Multi-Dimensional Security**
  - The ZXR10 5950-L Series switch supports ZESR+ Ethernet ring protection and ERPS, which can deliver the fast system recovery from any link or node fault
  - Support various authentication methods such as 802.1x, Radius, TACACS+. Support CPU overload protection, anti-DDOS, deliver customer a security network.
- **Low OPEX , Green for More**
  - The innovative M-Button delivers instant trouble-shooting by reading indicators on front

panel without login via terminal. It helps customer solve some common problems immediately.

- Support IEEE 802.3az EEE (Energy Efficient Ethernet). Via chip-grade power management, interfaces can automatically sleep when no traffic.
- The fan speed can be automatically adjusted by 5 levels in accordance with the temperature inside the switch. It not only saves the power consumption, but also reduces the noise and extends the life cycle of fans.
- Complying with ROHS, WEEE and ISO14001 certification, No plumbum (Pb) in not only product materials but also the whole processing technic. Meanwhile, use re-cycle degradable packing materials, practice green for more.

System Specification

Function and Parameters	5950-28TD-L	5950-52TD-L	5950-28PD-L	5950-52PD-L	5950-28SD-L
Dimensions (H*W*D)	43.6mm*442mm*440mm				
Fixed Interface	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 Slot	N/A	N/A	N/A	N/A	N/A
Weight	<6.2kg	<6.7kg	<7.7kg	<7.8kg	<7.5kg
Management Port	1 GE MNG, 1 RJ45 Console, 1 Mini USB Console				
AC Power Supply	Rated voltages: 100V~240V,50Hz~60Hz Maximum voltages: 90V~286V,45Hz~66Hz				
DC Power Supply	-38V ~ -57V	-38V ~ -57V	-38V ~ -57V	-38V ~ -57V	-40V ~ -72V
Maximum Power Consumption	<55W	<74W	<790W (POE:720W)	<1520W (POE:1440W)	<66W
Typical Power Consumption	30W	39W	42W	49W	38W
Power Redundancy Pattern	Two independent and swappable power supply module, support AC 1+1, DC 1+1				

Function and Parameters	5950-28TD-L	5950-52TD-L	5950-28PD-L	5950-52PD-L	5950-28SD-L
Heat Dissipation Pattern	Fan cooling, support multilevel speed regulation				
Heat Dissipation	<168 BTU/h	<207 BTU/h	<196 BTU/h	<224 BTU/h	<185 BTU/h
Working Temperature	Long term working temperature: -10 ℃~ +50 ℃ Short term working Temperature: -10 ℃~ +55 ℃				
Humidity	5%~95%				
Working Altitude	<5000 meters		<2000 meters		
MTBF/MTTR	>400000 hours/ < 30 minutes				
Switching Capacity	128Gbps	176Gbps	128Gbps	176Gbps	128Gbps
Packet Forwarding Rate	96Mpps	132Mpps	96Mpps	132Mpps	96Mpps
Jumbo Frame	12288 bytes				

Service Specification

Function	The ZXR10 5950-L Series Switch
L2 Features	Support IEEE 802.1p (COS), IEEE 802.1q (VLAN) Support 802.3x Flow Control Support IEEE 802.1d (STP)/ 802.1w (RSTP)/ 802.1s (MSTP) Support IEEE 802.3ad (LACP) Support IEEE 802.3z (1000Base-X) / 802.3ab (1000BaseT) Support IEEE 802.3ae (10Gbase) Support Port mirroring, Traffic mirroring Support PVLAN Support GVRP Support LLDP
L3 Features	Support IPv4 routing protocols, such as Static routing, Policy based routing , RIP v2, OSPF, BGP, and IS-IS Support DHCP server/ relay/proxy, DHCP snooping Support IPv6 routing protocols, such as Static routing, Policy based routing , RIPng, OSPFv3, IS-ISv6, and BGP4+

Function	The ZXR10 5950-L Series Switch
Multicast	Support IGMP v1/v2/v3, IGMPv1/v2/v3 snooping Support PIM-SM, PIM-DM, PIM-SSM Support administratively scoped multicast/ IPTV, MVR Support MLD v1/v2, MLD snooping, PIMv6
QOS	Support traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority Support 8 hardware-based queues per port Support queue scheduling algorithms, such as SP, WRR, DWRR, SP+WRR Support congestion avoidance mechanisms, such as WRED and tail drop Support policing/shaping based on port
PoE	Support POE (IEEE 802.3 af) Support POE+ (IEEE 802.3 at)
Security	Support L2-L4 ACL Support standard ACL,MAC ACL, L2 ACL, extended ACL, mixed ACL, VLAN ACL Support time-range ACL configuration, Bidirectional ACL Support 802.1x authentication and 802.1x server Support MAC authentication Support AAA/ RADIUS and TACACS+ authentication for login users Support SSH v1.0/v2.0 server Support CPU anti-attack Support STP Root Guard, BPDU guard Support URPF Support RIP/OSPF/BGP MD5 encryption checking
Reliability	Support 1+1 redundancy power supply Support Hot plugging Support LACP Support ZESR/ZESR+(ZTE Ethernet Switch Ring) Support ERPS Support VRRP,VRRPv3,VRRPE Support GR for OSFP/BGP/IS-IS MTBF: > 400000 hours MTTR: < 30 minutes EMC:

Function	The ZXR10 5950-L Series Switch
	• FCC Part 15 (CFR 47) Class A • l EN 55022 Class A • l ETSI EN 300 386 • l EN55024 • l ICES-003 Class A • l IEC 61000-3-2 • l IEC 61000-3-3 • l CISPR22 Class A • l CISPR24 • l ICES-003 Class A • l AS/NZS CISPR22 Class A • l IEC61000-4-2 • l ITU-T K 20 • l ITU-T K 21 • l ITU-T K 44 Safety: • UL 60950 3rd Edition • l CSA C22.2 No. 60950 3rd Edition • l IEC 60950 • l EN 60950 • l EN60825-1 • l EN60825-2 • l IEC60825-1 • l IEC60825-2
Equipment management	Support CLI, Telnet, SSHv2, Local and remote (Radius/Tacacs+) authentication of user Support SNMP v1/v2/v3 Support Mirroring Support RMON Support NTP Support Syslog Support Sflow Supports IPv6 equipment management.

Function	The ZXR10 5950-L Series Switch
Enhanced Features	Support M-BUTTON Support Zero-touch deployment Support OpenFlow 1.3
Operation and Maintenance	Supports the command line function. Supports hierarchical management authority . Support password aging and confirmation. Supports control console management. Supports access service management. Supports remote access by SSH, TELNET , or SNMP , and the FTP/TFTP function. Supports alarms in multiple manners. Supports the ZXNM01 unified network management system. Supports CLI and hierarchical network management. Supports user access control. Supports storage and restoration configuration. Supports log management, Syslog, and REMON functions. Supports time management and NTP functions. Supports basic MIB functions. Supports traffic statistics

Optical and Electrical Interface

Interface	Description
10 /100 /1000BASE-T	In compliance with IEEE802.3z RJ45 connector Category 5 UTP cable, maximum transmission distance: 100 m Half or full duplex, MDI/MDIX
100BASE-FX (SFP-M02K)	LC connector, connected with a multi-mode optical fiber, optical wavelength: 1310 nm, maximum transmission distance: 2 km Transmission power: -19 dBm to -14 dBm, receiving sensitivity: < -30 dBm

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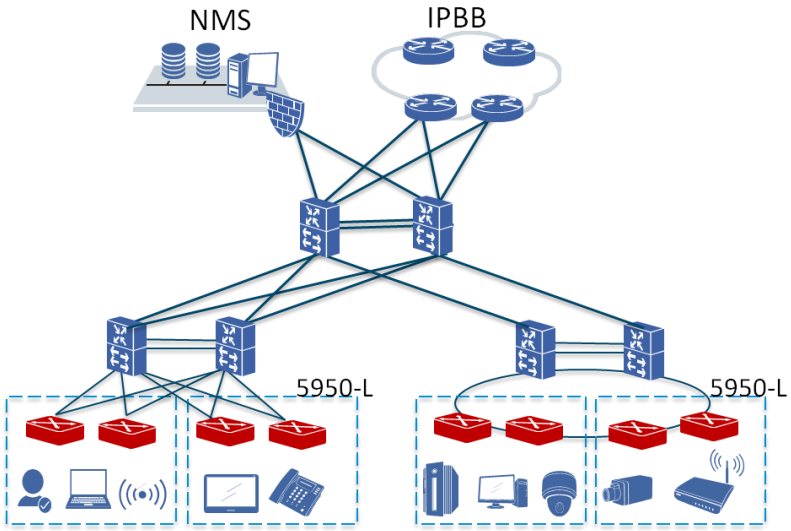
Interface	Description
100BASE-FX (SFP-S15K)	SFP optical module LC connector, connected with a single-mode optical fiber, optical wavelength: 1310 nm, maximum transmission distance: 15 km Transmission power: -14 dBm to -8 dBm, receiving sensitivity: < -31 dBm
100BASE-FX (SFP-S40K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1310 nm, maximum transmission distance: 40 km Transmission power: -4 dBm to -0 dBm, receiving sensitivity: < -37 dBm
100BASE-FX (SFP-S80K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1550 nm, maximum transmission distance: 80 km Transmission power: -3 dBm to +3 dBm, receiving sensitivity: < -37 dBm
1000BASE-SX (SFP-M500)	LC connector, connected with a single-mode optical fiber, optical wavelength: 850 nm, maximum transmission distance: 500 m Transmission power: -9.5 dBm to 4 dBm, receiving sensitivity: < -17 dBm
1000BASE-LX (SFP-S10K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1310 nm, maximum transmission distance: 10 km Transmission power: -9 dBm to 3 dBm, receiving sensitivity: < -20 dBm
1000BASE-LX (SFP-S40K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1310 nm, maximum transmission distance: 40 km Transmission power: -4.5 dBm to 5 dBm, receiving sensitivity: < -22 dBm
1000BASE-LX(SFP-S40K-1550)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1550 nm, maximum transmission distance: 40 km Transmission power: -5 dBm to 0 dBm, receiving sensitivity: < -22 dBm
1000BASE-LH (SFP-S80K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1550 nm, maximum transmission distance: 80 km

Interface	Description
	Transmission power: 0 dBm to 3 dBm, receiving sensitivity: < -22 dBm
1000BASE-LH (SFP-S120K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1550 nm, maximum transmission distance: 120 km Transmission power: 0 dBm to 5 dBm, receiving sensitivity: < -30 dBm
10GBASE-SR (SFP+-M300)	LC connector, connected with a multi-mode optical fiber, optical wavelength: 850 nm, maximum transmission distance: 300 m Transmission power: -7.3 dBm to -1.0 dBm, receiving sensitivity: < -1 1.1 dBm
10GBASE-LR (SFP+-S10K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1310 nm, maximum transmission distance: 10 km Transmission power: -8.2 dBm to 0.5 dBm, receiving sensitivity: < -10.3 dBm
10GBASE-ER/EW (SFP+-S40K)	LC connector, connected with a single-mode optical fiber, optical wavelength: 1550 nm, maximum transmission distance: 40 km Transmission power: -4.7 dBm to 4.0 dBm, receiving sensitivity: < -14.1 dBm

Application Scenario

- **Access and Aggregation in Carrier Network**

The ZXR10 5950-L Series switch supports VSC2.0 and POE/POE+, they can be applied in multiple scenarios including carrier access. Below is an example of typical application.



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Order Information

Mainframe

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

Fan Module

59-FAN	5950 Fan Module

Tomorrow never waits

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