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## ZTE ZXR10 8900E Series Switch Data Sheet

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# ZTE



## Product Overview

The ZXR10 8900E Series switch is high-end modular switch featuring big switching capacity, L2/L3/MPLS service capability, high-performance, superior reliability and enhanced security. The ZXR10 8900E Series switch is designed for core and aggregation layer of next-generation campus network scenario. The ZXR10 8900E Series switch allows fast, non-blocking switching and has full IPv6 feature. In addition, The ZXR10 8900E Series switch offers a variety of technologies to fulfill better reliability, easy maintenance and low power consumption: VSC2.0(Virtual Switch Cluster), BFD (Bi-directional Forwarding Detection), Zero-touch provisioning, IEEE 802.3az Energy Efficient Ethernet (EEE) etc, which help customer to build future-oriented low TCO(Total Cost of Ownership) networks.

The ZXR10 8900E Series switch uses advanced hardware architecture and modular design, up to 10.24Tbps wire-speed switching capacity with high capacity service cards including: 48 x10GE interfaces, 8 x 40GE interfaces, and 4 x100GE interfaces.



8902E

8905E

8908E

8912E

8908E-H

8912E-H

Coupled with distributed ROSng Software Platform, the ZXR10 8900E Series switch delivers the following products:

- 8902E: 2 interface board slots, 2 control board slots and 2 power supply module slots. 4RU, side-to-side airflow.
- 8905E: 5 interface board slots, 2 control switching slots and 3 power module slots. 10RU, side-to-side airflow.
- 8908E: 8 interface board slots, 2 control switching slots and 3 power module slots. 13RU, side-to-side airflow.



- 8912E: 12 interface board slots, 2 control switching slots and 3 power module slots. 17RU, side-to-side airflow.
- 8908E-H: 8 interface board slots, 2 control board slots, 4 independent switching fabric board slots and 3 power module slots. 17RU, side-to-side airflow.
- 8912E-H: 12 interface board slots, 2 control board slots, 4 independent switching fabric board slots and 3 power module slots. 21RU, side-to-side airflow.

### Product Features

- **Up to 10.24Tbps Wire-speed Switching Capacity, 4 x 100GE/ 48 x 10GE Interface Card**
  - The ZXR10 8900E Series switch supports up to 10.24Tbps wire-speed switching capacity with up to 1.28Tbps switching capacity per slot. It can deliver customer a sustainable high-performance campus core and aggregation network and carrier aggregation network for next 5 years.
  - The ZXR10 8900E Series switch line cards covers diverse Ethernet interfaces including: FE/GE/10GE/ 40GE/100GE. The high capacity line cards such as 48 ports wire-speed 10GE, 8 ports wire-speed 40GE and 4 ports wire-speed 100GE can bring customers with infinite bandwidth capability. Meanwhile, in the scenario that only need a few 10GE and GE interfaces, the 10GE and GE interface mixed line card can be deployed in order to help customer increase the line card usage and save investment.
- **Innovative VSC2.0 (Virtual Switch Cluster) Technology**
  - VSC2.0 Capability: Stacking bandwidth between the VSC switches can be up to 320Gbps, which can solve the bandwidth bottleneck of VSC and deliver customer a real-time non-blocking VSC system. By using optical Ethernet interface for stacking, the stacking distance can be up to 80km and even more, it helps customer to get rid of distance restriction while designing a reliable VSC system.
  - Reliability: Independent out-band management makes the control plane and forwarding plane separated. Through real-time control information hot-standby technology, the VSC system can achieve seamless switchover when failure happens.



- Saving investments: No need special stacking line card, the normal line card can be used for VSC connecting. When some interfaces are used for VSC, the other interfaces on this line card can also be used for traffic forwarding. No interfaces are wasted and that helps customer to save investments.
- Flexibility: Master and slave in VSC2.0 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.
- **Powerful Service Bearing Capability**
  - By supporting rich L2 switching and L3 routing functions and low latency forwarding, The ZXR10 8900E Series switch can bear lots of service including WLAN, Internet, Voice, Video, Enterprise private network and other data services.
  - Support distributed L2/L3 MPLS VPN; support VPLS, H-VPLS and VPWS. The ZXR10 8900E Series switch can also support MCE. By supporting these features, it delivers customer VPN service capability.
  - Support comprehensive L2/L3 Multicast protocols; support PIM-SM, PIM-DM, PIM-SSM, MLD and IGMP Snooping, fulfill the requirements for IPTV, multi-terminal high-definition video surveillance and video conferencing services.
  - Support POE/POE+ interface card, which delivers customer more flexible service access choice.
- **Comprehensive IPv6 Solution**
  - The ZXR10 8900E Series switch has passed IPv6 Ready Phase 2 Gold Medal Certification issued by IPv6 Forum.
  - 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 tunnel, etc.



- **Enhanced Reliability, Multi-Dimensional Security**

- Control plane and forwarding plane are physically separated on the ZXR10 8900E-H Series switch.
- All the key components of the ZXR10 8900E Series switch are redundant design and hot pluggable, including: main control boards, switching boards, power supply modules, fan modules.
- Support GR (Graceful Restart) to realize non-stop forwarding for OSFP/BGP/IS-IS to reduce the affection brought by network failures.
- Support Ethernet OAM, including IEEE 802.3ah, 802.1ag, Y.1731, and help to monitor network real-time operating status and fulfill fast fault detection, fault location.
- Support various authentication methods such as 802.1x, Radius, TACACS+. Support CPU overload protection, anti-DDOS, deliver customer a security network.
- The ZXR10 8900E supports MAC security (MACSec) that enables hop-by-hop secure data transmission. Therefore, the ZXR10 8900E can be applied to scenarios that need high requirements on data confidentiality, such as government and finance sectors.

- **Easy Maintenance, Saving OPEX**

- Support independent monitoring plane, which can monitor the working temperature, fan situation, power situation, etc. It can help customer hold the network running status in real time.
- Support Zero-touch provisioning, the software and the configuration files can be loaded automatically, Reduce provision process and man power requirement.
- Support the SQA (Service Quality Analyzer), detecting the network quality periodically or in real time. In order to provide better quality of service for more valuable services.

- **Green for More**

- Support IEEE 802.3az EEE (Energy Efficient Ethernet), via chip-grade power management, interfaces and line card can automatically sleep when no traffic.



- Side-to-side shoot-through airflow increases the heat dissipation efficiency. Save up to 12% overall power consumption.
- The fan rotational speed can be automatically and manually adjusted by 5 levels in accordance with the temperatures 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-cycles degradable packing materials, practice green for more.

## System Specification

Parameters	8902E	8905E	8908E	8912E	8908E-H	8912E-H
<b>Height</b>	4RU	10RU	13RU	17RU	17RU	20RU
<b>Dimensions (H*W*D, mm)</b>	175*442*420	442*442*446	575*442*446	753*442*446	753*442*446	889*442*446
<b>Switching Capacity</b>	960Gbps	4.8Tbps	7.68Tbps	7.68Tbps	10.24Tbps	10.24Tbps
<b>Packet Forwarding Rate</b>	720Mpps	3,600Mpps	5,760Mpps	5,760Mpps	7,680Mpps	7,680Mpps
<b>Number of Line Card Slots</b>	2	5	8	12	8	12
<b>Number of Main Control Slots</b>	2	2	2	2	2	2
<b>Number of Switching Card Slots</b>	N/A	N/A	N/A	N/A	4(3+1)	4(3+1)
<b>Interface Type</b>	FE/GE RJ45; GE SFP; 10GE SFP+; 40GE CFP; 40GE QSFP+; 100GE CFP2					
<b>Weight</b>	<24kg	<51.8kg	<65.5kg	<90.6kg	<77.4kg	<98.9kg
<b>AC Power Supply</b>	Rated input voltage range: 100V~240V,50Hz~60Hz Max input voltage range: 90V~286V, 47Hz~63Hz					
<b>DC Power Supply</b>	Rated input voltage: -48V/-60V Input voltage range: -72V ~ -40V					



Parameters	8902E	8905E	8908E	8912E	8908E-H	8912E-H
<b>HVDC Power Supply</b>	240V/336V					
<b>Power Consumption</b>	<576W	<1,589W	<2,278W	<3,217W	<2,624W	<3,565W
<b>Max POE Consumption</b>	1300W	4250W	5100W	5100W	5100W	5100W
<b>Power Redundancy Pattern</b>	AC/ DC: 1+1	AC/DC : 2+1/1+1				
<b>Heat Dissipation Pattern</b>	Fan cooling, independent fan subracks, Side-to-Side Airflow					
<b>Heat Dissipation</b>	<1,611 BTU/h	<4,445 BTU/h	<6,373 BTU/h	<9,000 BTU/h	<8,471 BTU/h	<9,425 BTU/h
<b>Working Temperature</b>	Long term working temperature: -5°C ~ +45°C; Short term working temperature: -10°C ~ +55°C;					
<b>Storage temperature</b>	-40°C ~ +70°C					
<b>Working Humidity</b>	5%~95% (non-condensing)					
<b>Working Altitude</b>	<3,000 meters					
<b>MTBF/MTTR</b>	>200,000 hours/ <30 minutes					

## Service Specification

Function	The ZXR10 8900E Series Switch
<b>L2 Features</b>	Support IEEE 802.1p (COS), IEEE 802.1q (VLAN), IEEE 802.3x Support IEEE 802.1d (STP)/ 802.1w (RSTP)/ 802.1s (MSTP) Support IEEE 802.1ad (QinQ), Selective QinQ Support IEEE 802.3ad (LACP), MC-LAG (Multi-Chassis Link Aggregation Group) Support IEEE 802.3z (1000BASE-X) / 802.3ab (1000BaseT) Support IEEE 802.3ae (10Gbase), Support IEEE 802.3ba (40Gbase) Support IEEE 802.3ba (100Gbase) Support IEEE 802.3af (PoE), IEEE 802.3at (PoE+)



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	<p>Support Port mirroring, Traffic mirroring</p> <p>Support VLAN switching, VLAN translation</p> <p>Support PVLAN, SuperVLAN</p> <p>Support GVRP</p> <p>Support LLDP</p>
<b>L3 Features</b>	<p>Support IPv4 routing protocols, such as Static routing, Policy based routing , RIP, OSPF, BGP, and IS-IS</p> <p>Support DHCP server/ relay/proxy, DHCP snooping</p> <p>Support IPv6 dynamic routing protocols, such as Static routing, Policy based routing , RIPng, OSPFv3, ISISv6, and BGP4+</p> <p>Support ND, DHCPv6, PMTU</p> <p>Support manual IPv6 tunnel, 6to4 tunnel, 6PE, ISATAP tunnel</p>
<b>Multicast</b>	<p>Support IGMP v1/v2/v3, IGMPv1/v2/v3 snooping</p> <p>Support PIM-SM, PIM-DM, PIM-SSM, MSDP, MBGP, Any-RP</p> <p>Support administratively scoped multicast/ IPTV, MVR,</p> <p>Support MLD V1/V2、MLD V1/V2 Snooping</p> <p>Support PIMv6</p>
<b>MPLS</b>	<p>Support basic MPLS functions, LDP</p> <p>Support MCE</p> <p>Support VPLS,VPWS, H-VPLS</p> <p>Support MPLS L2 VPN, MPLS L3 VPN</p>
<b>QOS</b>	<p>Support traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority</p> <p>Support queue scheduling algorithms, such as SP, WRR, DWRR, SP+WRR</p> <p>Support congestion avoidance mechanisms, such as WRED and tail drop</p> <p>Support policing/shaping based on port/flow</p>
<b>Security</b>	<p>Support L2-L4 ACL</p> <p>Support Ingress/ Egress ACL</p> <p>Support 802.1x authentication and 802.1x server</p> <p>Support MAC authentication</p> <p>Support AAA/ RADIUS and TACACS+ authentication for login users</p> <p>Support SSH v1.0/v2.0 server</p> <p>Support CPU anti-attack, CPU overload protection,</p> <p>Support STP Root Guard, BPDU guard,</p>



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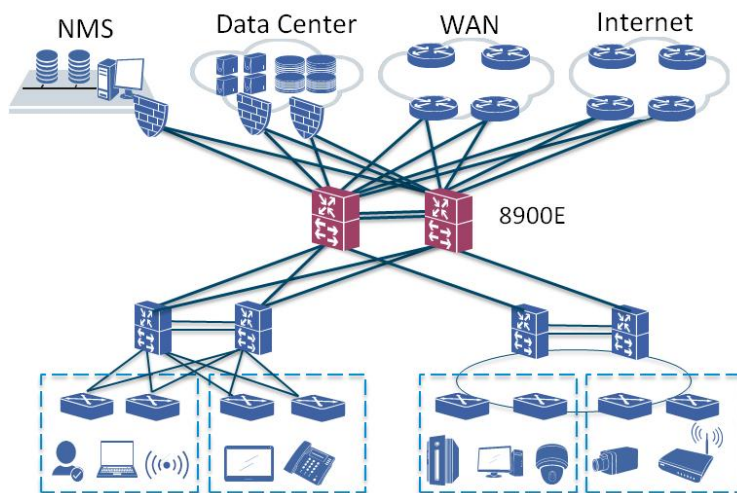


	<ul style="list-style-type: none"><li>Support URPF</li><li>Support RIP/OSPF/BGP MD5 encryption checking</li><li>Support MACsec</li></ul>
<b>Equipment management</b>	<ul style="list-style-type: none"><li>Support CLI, Telnet, SSH, Local and remote (Radius/Tacacs+) authentication of user</li><li>Support SNMP v1/v2/v3</li><li>Support RMON</li><li>Support NTP</li><li>Support Syslog, Sflow</li><li>Support openflow1.3</li></ul>
<b>Reliability</b>	<ul style="list-style-type: none"><li>Support VSC2.0(Virtual Switch Cluster)</li><li>Support 1+1/2+1 Redundant Control module/Power supply/Fan module</li><li>Support 3+1 redundancy switching boards (Only 8900E-H)</li><li>Support Hot plugging</li><li>Support LACP , MC-LAG</li><li>Support ZESR/ZESR+ (ZTE Ethernet Switch Ring)</li><li>Support ERPS V2</li><li>Support VRRP,VRRPv3,VRRPE</li><li>Support NSF/GR for OSFP/BGP/IS-IS</li><li>Support BFD for VRRP/ BGP/ IS-IS/ OSPF</li><li>Support Ethernet OAM (802.1ag and 802.3ah)</li><li>Support ITU-Y.1731</li></ul>



## Application Scenario

- Aggregation in Campus Network**



The ZXR10 8900E Series switch can be used in the next-generation campus network aggregation scenarios as the core/aggregation layer devices. The ZXR10 8900E Series switch supports powerful service capability such as L2/L3/MPLS, IPv6, POE, which provides 100GE, 40GE, high-density 10GE interfaces and fulfills the bearing requirements of WLAN, Voice, Video, Surveillance etc. It can be used to build the high-reliability, extendable, secure, manageable data switching network to provide the comprehensive product solution.

## Order Information

### Chassis

RS-8902E-CHS	8902E assembly chassis
8905E-CHS2-AC	8905E AC assembly chassis
8905E-CHS2-DC	8905E DC assembly chassis
8908E-CHS2-AC	8908E AC assembly chassis
8908E-CHS2-DC	8908E DC assembly chassis
8912E-CHS2-AC	8912E AC assembly chassis



8912E-CHS2-DC	8912E DC assembly chassis
8908E-H-CHS-AC	8908E-H AC assembly chassis
8908E-H-CHS-DC	8908E-H DC assembly chassis
8912E-H-CHS-AC	8912E-H AC assembly chassis
8912E-H-CHS-DC	8912E-H DC assembly chassis

## Control Switching Board

8902EMCS1A	8902E 1A type control switching board
8902EMCS1D	8902E 1D type control switching board
8905EMCS1A	8905E 1A type control switching board
8905EMCS1D	8905E 1D type control switching board
8905EMCS3A	8905E 3A type control switching board
8905EMCS3E	8905E 3E type control switching board
8908EMCS1A	8908E 1A type control switching board
8908EMCS1D	8908E 1D type control switching board
8908EMCS3A	8908E 3A type control switching board
8908EMCS3E	8908E 3E type control switching board
8912EMCS1A	8912E 1A type control switching board
8912EMCS1D	8912E 1D type control switching board
8912EMCS3A	8912E 3A type control switching board
8912EMCS3E	8902E 3E type control switching board

## Main Control Board

8900EHMCUA	8900E-H main control board
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## Switching Fabric Board



8900EHSFU3A	8900E-H Type A switching fabric board
8900EHSFU3E	8900E-H Type B switching fabric board

## Power Supply Module

8902E-ACPWA	8902E AC power supply module
8902E-DCPWA	8902E DC power supply module
8900E-ACPWA	8905E/8908E/8912E/8908E-H/8912E-H AC power supply module
8900E-DCPWA	8905E/8908E/8912E/8908E-H/8912E-H DC power supply module

## Fan Supply Module

8902E-FAN	8902E fan subracks
8905E-FAN	8905E fan subracks
8908E-FAN	8908E fan subracks
8912E-FAN	8912E fan subracks
8908E-H-FAN	8908E-H fan subracks
8912E-H-FAN	8912E-H fan subracks

## 100M/1000M Ethernet electrical interface cards

S1GT24A	24-port 10/100/1000 BASE-T interface card (S1, RJ45)
S1GT48A	48-port 10/100/1000 BASE-T interface card (S1, RJ45)
S1GP48A	48-port 10/100/1000 BASE-T interface card (S1, RJ45, POE/POE+)
H1GT48A	48-port 10/100/1000 BASE-T interface card (H1, RJ45)
H2GT48D	48-port 10/100/1000 BASE-T interface card (H2, RJ45)

## 100M/1000M Ethernet optical interface cards

S1GF24A	24-port 100/1000 BASE-X interface card (S1, SFP)
S1GF48A	48-port 100/1000 BASE-X interface card (S1, SFP)



H1GF24A	24-port 100/1000 BASE-X interface card (H1, SFP)
H1GF48A	48-port 100/1000 BASE-X interface card (H1, SFP)
H2GF24D	24-port 100/1000 BASE-X interface card (H2, SFP)
H2GF48D	48-port 100/1000 BASE-X interface card (H2, SFP)

### 10GE Ethernet optical interface cards

S1XF12A	12-port 10G BASE-X interface card (S1, SFP+)
S2XF48A	48-port 10G BASE-X interface card (S2, SFP+)
H1XF4A	4-port 10G BASE-X interface card (H1, SFP+)
H1XF8A	8-port 10G BASE-X interface card (H1, SFP+)
H1XF16A	16-port 10G BASE-X interface card (H1, SFP+)
H1XF32A	32-port 10G BASE-X interface card (H1, SFP+)
H2XF8D	8-port 10G BASE-X interface card (H2, SFP+)
H2XF48C	48-port 10G BASE-X interface card (H2, SFP+)
H3XF12D	12-port 10G BASE-X interface card (H3, SFP+)

### 10 GE and GE optical/electrical interface cards

H1GF28C12X2C	2-port 10GE BASE-X and 28-port GE BASE-X (12-port Combo) interface card (H1,SFP+/SFP/RJ45)
H1GF28C12X4C	4-port 10GE BASE-X and 28-port GE BASE-X (12-port Combo) interface card (H1,SFP+/SFP/RJ45)
H1GT28C12X2B	2-port 10GE BASE-X and 28-port GE BASE-T (12-port Combo) interface card (H1,SFP+/SFP/RJ45)
H1GT28C12X4B	4-port 10GE BASE-X and 28-port GE BASE-T (12-port Combo) interface card (H1,SFP+/SFP/RJ45)

### 40GE Ethernet optical interface cards

S2LQ6L2A	8-port 40GE BASE-X interface card (S2, 2 port CFP, 6 port QSFP+)
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### 100GE Ethernet optical interface cards



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H2UC2C	2-port 100GE BASE-X interface card (H2, 2 port CFP2)
H2UC4C	4-port 100GE BASE-X interface card (H2, 2 port CFP2)

### 10GE WAN optical interface cards

H1XW4B	4-port 10G BASE-X interface card (H1, SFP+)
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### Software

R8900E-SW-BASIC	8900E Basic System Software
R8900E-SWUD	8900E Basic System Software Upgrade
SWLIC-MPLS	8900E MPLS Software Service



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