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you
Closer*

**ZXR10 5250 Series All Gigabit Intelligent Switch
--Innovative Features Bring High Efficiency**

ZTE中兴

Overview

With further development on broadband access, 1000Mbps ports appear more and more on the latest generation access equipment and 1000Mbps to the desktop is becoming the main trend. ZTE ZXR10 5250 series all gigabit intelligent switches are gigabit switches presented by ZTE Corporation to meet the trend. With high-density Gigabit interfaces, built-in high-speed ASIC forwarding chips, full security and reliability related features, efficient QoS priority mechanisms and flexible management patterns, ZXR10 5250 fully satisfies the requirements of campus networks and IDC (Internet Data Center). It can act as the access/aggregation switch or IDC TOR.

ZXR10 5250 supports comprehensive features to facilitate the deployment of unicast/multicast services. Traffic separation/QoS/network resilience/security related requirements can all be met. ZXR10 5250 is also strong in its easy-maintenance and energy-saving features, making large scale deployment both efficient and environmental-friendly.

ZXR10 5250 offers 3 sub-series of products: ZXR10 5250-L, ZXR10 5250 and ZXR10 5250-H. ZXR10 5250-L supports relatively basic features; ZXR10 5250 supports more features, has stronger performance for certain functions while 5250-H supports advanced feature like Ethernet OAM.

Following switch types are included in ZXR10 5250 series: 5250-28TS-L, 5250-52TS-L, 5250-28TC, 5250-52TC, 5250-28SM, 5250-28PM, 5250-52PM, 5250-28TC-H, 5250-52TC-H, 5250-28TM-H, 5250-52TM-H, 5250-28PM-H and 5250-52PM-H. The interface combinations of these switches are listed below:

5250-28TS-L: 24*GE RJ45 + 4*GE SFP

5250-52TS-L: 48*GE RJ45 + 4*GE SFP

5250-28TC: 24*GE RJ45 + 2*GE SFP + 2*GE Combo

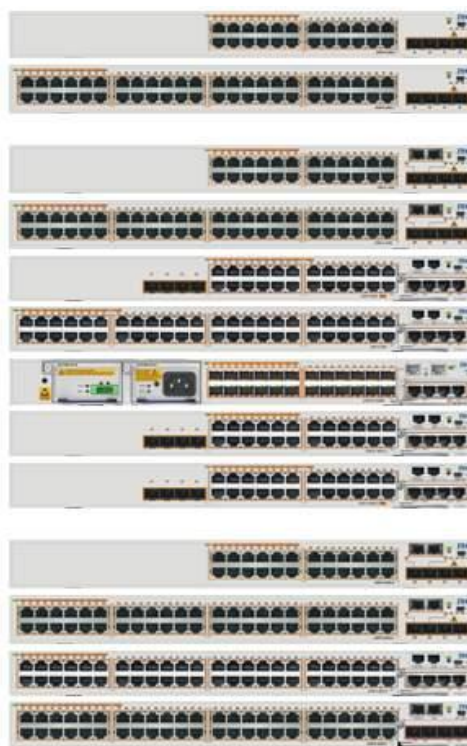
5250-52TC: 48*GE RJ45 + 2*GE SFP + 2*GE Combo

5250-28SM: 24*GE SFP + 1*expansion card slot (4*GE RJ45/4*GE SFP available)

5250-28PM: 20 GE RJ45 (POE/POE+) + 4 GE Combo ports + 1*expansion card slot (4*GE RJ45/4*GE SFP /4*10GE SFP+ available)

5250-52PM: 48*GE RJ45 (POE/POE+) + 1*expansion card slot (4*GE RJ45/4*GE SFP /4*10GE SFP+ available)

ZXR10 5250 Series All Gigabit Intelligent Switch



5250-28TC-H: 24*GE RJ45 + 2*GE SFP + 2*GE Combo

5250-52TC-H: 48*GE RJ45 + 2*GE SFP + 2*GE Combo

5250-28TM-H: 20 GE RJ45 + 4 GE Combo + 1*expansion card slot (4*GE RJ45/4*GE SFP /4*10GE SFP+ available)

5250-52TM-H: 48 GE RJ45 + 1*expansion card slot (4*GE RJ45/4*GE SFP /4*10GE SFP+ available)

5250-28PM-H: 20 GE RJ45 (POE/POE+) + 4 GE Combo ports + 1*expansion card slot (4*GE RJ45/4*GE SFP /4*10GE SFP+ available)

5250-52PM-H: 48*GE RJ45 (POE/POE+) + 1*expansion card slot (4*GE RJ45/4*GE SFP /4*10GE SFP+ available)

Innovative Features

As the network is converging and the service types in campus network are developing at an ever faster speed, customers are constantly raising higher requirements to the network access devices. Among these requirements, service bearing capability, security, easy-maintenance and energy-efficiency are the top concerns. ZXR10 5250 is the switch equipped with state-of-the-art technologies in these aspects.

Smart VLAN Support

ZXR10 5250 not only supports 1:1 VLAN mapping, but also supports N: 1 VLAN mapping. VLAN aggregation thus can be implemented at the access layer to increase the efficiency of VLAN utilization.

ZXR10 5250 also supports QinQ and flexible selective QinQ. Network administrator can distinguish user and service effectively and apply different strategies thereafter.

ZXR10 5250 series support Voice VLAN (which means the automatic assignment of dedicated VLAN and Qos strategy to voice equipments), thus enabling the voice traffic to enjoy high priority.

Improve Video Bearing Capabilities

Multicast based technologies like IPTV are important profitable point for service providers. ZXR10 5250 fully supports L2 multicast, including IGMP snooping, Filtering, Proxy and Fastleave, 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.

Multicast Qos are also supported to minimize the risks of delay, jitter of the multicast traffic. The time needed to get new user on-line is very short.

IPv6 Features

ZXR10 5250 supports IPv6 features, including Telnet V6, Ping V6, ICMPv6, ND, MLD Snooping, IPV6 ACL and DHCP V6 Snooping to facilitate the deployment of these services.

Intelligent Power Over Ethernet

All the electrical access interfaces of 5250-28PM and 5250-52PM support POE and POE+, which go in line with 802.3af and 802.3at standards, and are compatible with PD equipments that doesn't support 802.3af and 802.3at. For POE, the power output per single interface can reach 15.4W; For POE+, the power output per single interface can reach 30W. Not all interfaces can reach 30W output at the same time.

5250-28PM and 5250-52PM support negotiating POE power through LLDP-MED; once the needed power is bigger than the output power, alarms will be generated and sent to the OAM centre.

ZXR10 5250 series switches support assigning time-ranges for POE and maximum POE output for specific interfaces, in time periods that doesn't need power output, the POE function can be turned off, saving energy for the customer. During the time when power output is unnecessary, the POE function can be turned off to save energy for the customer.

5250-28PM and 5250-52PM are compatible with PD equipment that doesn't meet 802.3af and 802.3at standards.

Enhanced Reliability

ZXR10 5250 series switches support Ethernet smart ring protection function, which goes in line with RFC3619 and ITU.T G.8032 standard. Ethernet smart ring protection can be implemented in both close ring and open ring topology; Multiple instances can be configured in order to realize load-balancing. The switchover time can be kept below 50ms.

ZESS (ZTE Ethernet Smart Switch) and LACP (Link Aggregation Control Protocol) can help guarantee the reliability of the uplink connection.

With technologies like DHCP snooping and IP source guard, user validity can be guaranteed; DAI (dynamic ARP inspection) function can help effectively mitigate the influence caused by ARP attacks.

5250 supports MFF (MAC forced forwarding), L2 separation and L3 inter-communication can be realized;

Network traffic monitoring technologies including mirroring (SPAN and RSPAN) and sFlow are all supported, further enhancing the security of the network.

Enhanced Security

ZXR10 5250's CPU uses control plane security mechanism to classify and control the speed of the protocol messages that CPU needs to process. This mechanism makes sure that the speed of the messages

delivered to the protocol stack is within a proper range, which avoids CPU breakdown caused by excessive messages.

For user management, ZXR10 5250 not only supports normal username/password login method, but also supports encrypted login pattern including SSH, further eliminating the risk of username/password revelation.

ZXR10 5250 supports not only ingress ACL, but also egress ACL. User can implement incoming and outgoing traffic classification and speed restriction at the same time. This mechanism enables the customer to greatly simplify configuration and make more refined control in certain scenarios.

For Equipment access control, ZXR10 5250 series switches support local authentication, Tacacs+ authentication and Radius authentication.

5250 supports SSL and can act as a SSL server.

Energy-Saving and Green

ZXR10 5250 series switches fully support IEEE 802.3az, which means it can set the port to idle state dynamically when there's no traffic transmission over the port. In this way, electricity can be saved, and the power consumption of a single port can be reduced by 70%.

ZXR10 5250 supports dynamic fan speed adjustment technology; the rotating speed of the fan can be adjusted according to the internal temperature of the equipment. When the equipment is experiencing relatively high temperature, the rotating speed of the fan will be increased; when the equipment is experiencing relatively low temperature, the rotating speed of the fan will be decreased.

The materials used in making ZXR10 5250 series also go in line with RoHS and WEEE standards, which means minimum pollution and great contribution to global environment.

By using other energy-saving technologies, for example, disabling idle ports and adjusting port power consumption per cable length, ZXR10 5250 series decreases the power consumption for the customer to the utmost extent.

Easy Maintenance

Creative M-Button enables the administrator to obtain the status of equipment, like memory and CPU utilization rate without login onto the 5250. With this feature, the time for administrator to locate the failure cause can be greatly reduced.

ZXR10 5250 supports zero-configuration. When powered on, the equipment will automatically fetch its own software version and images.

ZXR10 5250 supports off-power alarming. Off-power alarm means the equipment can send alarms to designated server if there is a power failure, reporting the equipments halts working because of the

power failure. Power failure is a commonly seen error for access equipments, and off-power alarm can help the operation staff make quick judgment and accelerate failure processing.

ZXR10 5250 also supports Ethernet OAM. It not only provides linking fault detection but also provides a method to measure network performances. ZXR10 5250 supports IEEE 802.1ag Connectivity Fault Management (CFM), Ethernet Local Management Interface (E-LMI), IEEE 802.3ah Ethernet OAM discovery, link monitoring, remote fault detection, remote loopback and Y.1731.

ZXR10 5250 supports multiple remote management patterns, including WEBUI, telnet, SNMP, and a USB console interface. The access of equipments can also be controlled by protocols like RADIUS and TACACS+.

Except for traditional management patterns like Telnet and SNMP, ZXR10 5250 also supports USB console and WebUI, further adding the convenience of management.

Two software image files can be stored for backup purpose.

Technical Specification

| | 5250-L | 5250 | 5250-H |
|-------------------------|--|--|--|
| Type of Product | 5250-28TS-L 5250-52TS-L | 5250-28TC 5250-52TC 5250-28SM 5250-28PM 5250-52PM | 5250-28TC-H 5250-52TC-H 5250-28TM-H 5250-52TM-H 5250-28PM-H 5250-52PM-H |
| Fixed interfaces | 5250-28TS-L: 24 GE RJ45 ports+4 GE SFP ports 5250-52TS-L: 48 GE RJ45 ports+4 GE SFP ports | 5250-28TC: 24 GE RJ45 ports+2 GE SFP ports+2 GE Combo ports 5250-52TC: 48 GE RJ45 ports+2 GE SFP ports+2 GE Combo ports 5250-28SM: 24 GE SFP ports 5250-28PM: 20 GE RJ45 ports(POE/POE+)+ 4 GE Combo ports 5250-52PM: 48 GE RJ45 ports(POE/POE+) | 5250-28TC-H: 24 GE RJ45 ports+2 GE SFP ports+2 GE Combo ports 5250-52TC-H: 48 GE RJ45 ports+2 GE SFP ports+2 GE Combo ports 5250-28TM-H: 20 GE RJ45 ports+ 4 GE Combo ports 5250-52TM-H: 48 GE RJ45 ports 5250-28PM-H: 20 GE RJ45 ports(POE/POE+)+ 4 GE Combo ports 5250-52PM-H: 48 GE RJ45 ports(POE/POE+) |

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|---------------------------------------|---|---|--|
| Number of expansion card slots | - | 5250-28TC/5250-52TC : - 5250-28SM/5250-28PM/5250-52PM: 1 | 5250-28TC-H/5250-52TC-H : - 5250-28TM-H/5250-52TM-H/5250-28PM-H/5250-52PM-H: 1 |
| Type of expansion card | - | 5250-28TC/5250-52TC : - 5250-28SM: 4 GE RJ45 ports/4 GE SFP ports 5250-28PM/5250-52PM: 4 10GE SFP+ ports/4 GE RJ45 ports/4 GE SFP ports | 5250-28TC-H/5250-52TC-H: - 5250-28TM-H/5250-52TM-H/5250-28PM-H/5250-52PM-H: 4 10GE SFP+ ports/4 GE RJ45 ports/4 GE SFP ports |
| Backplane Capacity | 5250-28TS-L:256Gbps 5250-52TS-L:256Gbps | 5250-28TC:256Gbps 5250-52TC:256Gbps 5250-28SM:256Gbps 5250-28PM:256Gbps 5250-52PM:320Gbps | 5250-28TC-H:256Gbps 5250-52TC-H:256Gbps 5250-28TM-H:256Gbps 5250-28PM-H:256Gbps 5250-52TM-H:320Gbps 5250-52PM-H:320Gbps |
| Switching Capacity | 5250-28TS-L:56Gbps 5250-52TS-L:104Gbps | 5250-28TC:56Gbps 5250-52TC:104Gbps 5250-28SM:56Gbps 5250-28PM:128Gbps 5250-52PM:176Gbp | 5250-28TC-H:56Gbps 5250-52TC-H:104Gbps 5250-28TM-H:128Gbps 5250-28PM-H:128Gbps 5250-52TM-H:176Gbps 5250-52PM-H:176Gbps |
| Packet Forwarding Rate | 5250-28TS-L/5250-28TC/5250-28SM/5250-28TC-H: 42Mpps 5250-52TS-L/5250-52TC/5250-52TC-H: 78Mpps 5250-28TM-H/5250-28PM/5250-28PM-H: 96Mpps 5250-52TM-H/5250-52PM/5250-52PM-H: 132Mpps | | |
| MAC table Depth | 16K | | |
| Management Port | 1 | | |
| Console Port | 1 RS232 Console (RJ45), 1 USB console | 5250-28TC/5250-52TC/5250-28PM/5250-52PM: 1 RS232 Console (RJ45), 1 USB console 5250-28SM: 1 RS232 Console (RJ45) | 1 RS232 Console (RJ45), 1 USB console |

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|-------------------------|---|---|--|
| POE | - | 5250-28TC/5250-52TC/5250-28SM: - 5250-28PM/5250-52PM: Support 802.3af and 802.3at. For POE, the power output per single interface can reach 15.4W; For POE+, the power output per single interface can reach 30W | 5250-28TC-H/5250-52TC-H/5250-28TM-H/5250-52TM-H: - 5250-28PM-H/5250-52PM-H: Support 802.3af and 802.3at. For POE, the power output per single interface can reach 15.4W; For POE+, the power output per single interface can reach 30W |
| MAC Features | Support IEEE 802.1d, MAC address learning and aging Support IP+MAC+Port binding Support Limit on the number of learned MAC addresses | | |
| Port Features | Jumbo frame support Maximum 10K Byte Speed/duplex auto-negotiation, MDI/MDI-X auto-negotiation VCT cable inspection Interface loopback test Broadcast/Multicast/unknown Unicast suppression | | |
| Port Aggregation | Support LACP Support Static Trunk Support 15 groups each group 8 interface | | |
| Mirror | Support Port based Egress/ingress/bidirectional mirroring Support 1: 1/1: N/N: 1 port mirroring Support flow mirroring Support RSPAN | | |
| VLAN | Support port-based VLAN (4k VLANs) Support protocol-base VLAN Support MAC-based VLAN(5250&5250-H support) Support VoiceVLAN Support VLAN translation(5250&5250-H support) Support PVLAN Support Selective QinQ(5250&5250-H support) Support GVRP | | |
| Ethernet Ring | STP, RSTP, MSTP ZESR/ZESR+(ZTE Ethernet Switch Ring)(5250&5250-H support) | | |
| Reliability | LACP | LACP ZESS(ZTE Ethernet smart switch) | |

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| DHCP Features | DHCP Snooping DHCP Proxy DHCP Relay DHCP Option82 | | |
| EasyManagement | Support M-BUTTON function Support Zero-configuration | | |
| IP Routing | - | Static routing Static routing For IPv6 | |
| IPv6 | Support IPv6 Ping, IPv6 Telnet Support ND(Neighbor Discovery) Support MLD Snooping(5250&5250-H support) Support DHCPv6 snooping(5250&5250-H support) Support IPv6 ACL | | |
| Multicast | IGMP Snooping V1/V2/V3 Controllable multicast, CAC (channel access control)(5250&5250-H support) MVR (Multicast VLAN Registration) UGAC(User Group Access Control), UGAR(User Group Access Record)(5250&5250-H support) | | |
| QoS/ACL | Policing/shaping based on port/flow 8 hardware-based queues per port(5250-L: 4 hardware-based queues per port) Marking, modification of Qos priority and mapping between 802.1p, IP DSCP SP, WRR, SP+WRR queue scheduling mechanisms Congestion avoidance mechanisms including Tail-Drop MAC-based, IP-based basic ACL Layer2 ACL, Extended ACL based on 5 purples, Hybrid ACL, VLAN ACL Self-configuration ACL(5250&5250-H support) ACL based on time-range Bidirectional ACL(5250&5250-H support) | | |
| Security | Hierarchical management and password protection of users CPU anti-attack, CPU overload protection Broadcast/Multicast/unknown Unicast suppression Port isolation Dynamic ARP Inspection Support 802.1x, Guest VLAN, Radius authentication STP Root Guard, BPDU guard IP Source Guard | | |
| OAM | - | - | 802.1ag, 802.3ah, Y.1731 |

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|-----------------------------------|--|---|---|
| Management and Maintenance | RS232 Console(RJ45) Out-band management interface configuration and maintenance via CLI, Telnet, and SSH FTP, TFTP Web management Local and remote(Radius/Tacacs+)authentication of user SNMPv1/v2/v3 DHCP Client NetNumen U31 EasyManager zero-configuration and Fast in-batch inspection tool Cluster Management(ZGMP) NTP, SYSLOG, RMON SFLOW(5250&5250-H support) Dying gasp power-off alarm(5250&5250-H support) | | |
| Dimensions(H*W*D) | 5250-28TS-L/5250-52TS-L/5250-28TC/5250-52TC/5250-28SM/5250-28TC-H/5250-52TC-H: 43.6mm*442mm*220mm 5250-28TM-H/5250-28PM/5250-28PM-H/5250-52PM/5250-52TM-H/5250-52PM-H: 43.6mm*442mm*440mm | | |
| Maximum Weight | 5250-28TS-L/5250-28TC/5250-28TC-H: 2.9kg 5250-52TS-L/5250-52TC/5250-52TC-H: 3kg 5250-28SM: 4kg 5250-28TM-H/5250-52TM-H: 6.4kg 5250-28PM/5250-28PM-H/5250-52PM/5250-52PM-H: 7.5kg | | |
| DC Power Supply | - | 5250-28TC/5250-52TC/5250-28SM: -48V 5250-28PM/5250-52PM: -57V~-48V(POE:-57V~-48V,POE+:-57V~-53V) | 5250-28TM-H/5250-52TM-H/5250-28TC-H/5250-52TC-H: -48V 5250-28PM-H/5250-52PM-H: -57V~-48V(POE:-57V~-48V,POE+:-57V~-53V) |
| AC Power Supply | 100V~240V, 50Hz~60Hz | | |
| Typical power consumption | 5250-28TS-L: 26W 5250-52TS-L: 52W | 5250-28TC/5250-28TC-H: 27W 5250-52TC/5250-52TC-H: 53W 5250-28SM: 39W 5250-28TM-H: 51W 5250-52TM-H: 70W 5250-28PM/5250-28PM-H: 831W(Among which system power 111W, POE power output 720W) 5250-52PM/5250-52PM-H: 1020W(Among which system power 180W, POE power output 840W) | |

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|---------------------------------|---|---|---|
| Power redundancy pattern | 5250-28TS-L/5250-52TS-L/5250-28TC/5250-52TC/5250-28TC-H/5250-52TC-H: 180W RPS(Redundant Power Supply)(AC/DC Input : 100V~240V/-48V, DC Output: +12V) 5250-28SM/5250-28PM/5250-28PM-H/5250-28TM-H/5250-52PM/5250-52TM-H/5250-52PM-H: Two independent and swappable power supply modules | | |
| Heat dissipation pattern | Fan cooling(The rotating speed of the fan can be adjusted according to the internal temperature of the equipment) | | |
| Maximum Heat dissipation | 5250-28TS-L: 73 BTU/h 5250-52TS-L: 146 BTU/h | 5250-28TC: 76 BTU/h 5250-52TC: 148 BTU/h 5250-28SM: 109 BTU/h 5250-28PM: 311 BTU/h 5250-52PM: 504 BTU/h | 5250-28TC-H: 76 BTU/h 5250-52TC-H: 148 BTU/h 5250-28TM-H: 143 BTU/h 5250-52TM-H: 196 BTU/h 5250-28PM-H: 311 BTU/h 5250-52PM-H: 504 BTU/h |
| Temperature, humidity | working temperature: -5°C~ +50°C, humidity: 20%~90% | | |
| Working altitude | < 3000 meters | | |
| MTBF/MTR | > 100000 hours/ < 30 minutes | | |



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