

# ZXR10 5250 Series All Gigabit Intelligent Switch

## —Innovative Features Brings Great Efficiency

### Overview

With further development on broadband access, 1000Mbps ports are more and more widely adopted for all latest generation terminal equipments, 1000Mbps to the desktop is becoming the main trend.

ZXR10 5250 series Easy-Maintenance switch adopts high-speed ASIC forwarding chips and fully support complete L2 protocols, efficient QOS priority mechanisms and flexible management patterns. With high-density GE ports, it can fully meet the application need for Metro Ethernet access or campus networks access.

ZXR10 5250 series offers following four switch types: 5250-28TC, 5250-52TC, 5250-28SM and 5250-52PM. The interface combination of these switches are listed below:

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

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

5250-52PM: 48\*GE electrical + 4\*GE electrical/optical (or 4\*10GE optical)



Figure 1 5250-28TC/-52TC/-52PM/-28SM

### Innovative Features

As the network is converging and the services are developing at ever faster speed, customers are constantly asking for more and more convenient operation and maintenance of the network equipments. Among the customers' requirements, capability of fast deployment, energy-efficiency and security are the top concerns. ZXR10 5250 is the switch equipped with state-of-art technologies in these aspects.

#### Smart vlan Support

ZXR10 5250 not only support 1:1 vlan mapping, but also support N: 1 vlan mapping, vlan aggregation thus can be realized at the access layer, increasing the efficiency of using vlan.

ZXR10 5250 also support QinQ and flexible selective QinQ. Operator can distinguish user and service effectively and apply different strategies later.

ZXR10 5250 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.

#### High performance Multi-service platform

Multicast service is the profitable point of many operators. ZXR10 5250 give full support to L2 multicast. ZXR10 5250 support IGMPv1/v2/v3 snooping, proxy and IGMP fast leave. ZXR10 5250 also support MVR and multicast Qos, solving the problem brought by large scale multicast replication.

Besides that, ZXR10 5250 series products support IPTV, which means they are capable of providing rich rules and channel combinations for customers.

Operators can offer extremely flexible channel packages to customers to maximize their benefits.

All the electrical access interfaces of ZXR10 5250-52PM support POE and POE+, which go in line with 802.3af and 802.3at standards, and is 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 supply 30W at the same time.

ZXR10 5250 supports POE power output for assigned time-ranges, in time periods that doesn't need power output, the POE function can be turned off, thus saving energy for the customer.

### 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 delivered the message for the protocol stacking is within a proper range, which avoids the breakdown of CPU caused by exceeding messages.

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

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

For Equipment access control, ZXR10 5250 support local authentication, Tacacs+ authentication and Radius authentication; For HSI user authentication, ZXR10 5250 support diversified patterns including VBAS, DHCP option 82 and PPPOE+.

### Energy saving and Green

ZXR10 5250 fully supports 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 single port can be reduced by 70%.

ZXR10 5250 supports dynamic fan speed adjustment technologies, 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 speed of the fan will be increased; when the equipment is experiencing relatively low temperature, the speed of the fan will be decreased.

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

By using other energy-saving technologies, for example, disable idle ports and adjust port power consumption as per cable length, ZXR10 5250 decreases the power consumption for the customer maximally.

### Easy Maintenance

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

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

ZXR10 5250 give support to off-power alarm. 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 commonly seen error for access equipment, and off-power alarm can help the operation staff make quick judgment and accelerate the processing of failures.

ZXR10 5250 also support 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, and remote loopback and Y.1731. It not only provides linking fault detection but also provides a method to measure network performance.

ZXR10 5250 not only support innovative USB console interface, but also support multiple remote management patterns,

including web, telnet and SNMP. The access of equipments can also be controlled by protocols like RADIUS and TACACS+.

## Applications and Services

ZXR10 5250 enable service providers to offer multiple services on converged network architecture, while providing the capability of smooth migration to future network. With full support to abundant features including 802.1x access control, IP source guard, DAI, security interface and freezing of dynamic MAC, the security of the network can be well guaranteed.

- FTTH
  - With high-density GE interfaces, full Ethernet OAM/Qos capability, ZXR10 5250 is able to provide good-quality Gigabit to home services.

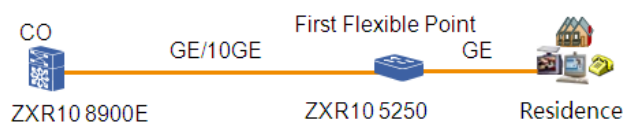


Figure 2 5250 in FTTH application scenario

- Metro-E/Campus GE access

- 5250 supports full L2 features to provide Carrier-level Ethernet service in following aspects:  
Standardized services/Scalability/Reliability/  
Quality of Service (QoS)/Service management

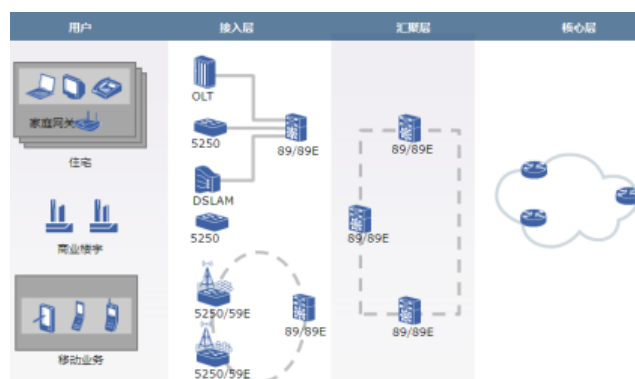


Figure 3 ZXR10 5250 for Metro Ethernet Access

## Technical Specification

Technical Specification	5250-28TC	5250-52TC	5250-28SM	5250-52PM
Physical Dimensions(H*W*D)mm	43.6*442*220	43.6*442*220	43.6*442*220	43.6*442*440
L2 protocol	IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, STP, MSTP/RSTP, VLAN, QinQ, ESRP			
OAM	802.3ah 802.1ag Y.1731, M-button, Zero-Configuration,			
Security Features	CPU protection, feature identification filtering, STP root guard, BPDU and APR attack guard, uRPF, IP source guard			
Qos	L2-based priority queuing; Flow control based on L2, L3, L4 source and destination ; Bandwidth control: Port-, application- and flow-based bandwidth control			
Management Methods	Console RS232, Local Command Line CLI, Remote Telnet, Standard SNMP, Diagramming Management ZGMP, local and remote authentication of user, Easymanager			
Switching capacity	56Gbps	104Gbps	56Gbps	176Gbps
Weight	<2.9kg	<3.0kg	<4.0kg	<7.5kg
Power supply (DC/AC)	AC : 100V~240V, 50Hz~60Hz; DC: -48V Support RPS: +12V DC	AC : 100V~240V, 50Hz~60Hz; DC: -48V Support RPS: +12V DC	AC : 100V~240V, 50Hz~60Hz; DC: -48V Dual power supply	AC : 100V~240V, 50Hz~60Hz; DC: -52V Dual power supply
Maximum Power usage	27W	53W	39W	Max POE output power: 840W,max system Power: 180W)
MTBF/MTRR	100,000 hours/ 30 minutes			
Operating Environment	Temperature:-5°C~+50°C; Humidity:10%~90% (non-condensing)			