

# ZXR10 6800 Router

## Overview

ZXR10 6800 series router is an intelligent multi-service routers, combines routing, switching, wireless, security, VPN, and BRAS in one. With a modular, scalable system architecture and open service unit (OSU), ZXR10 6800 can help customers to build smart, highly efficient, reliable, flexible, easy-dimensional network. ZXR10 6800 series routers based on the difference in the number of slot and performance, launched three models 6802, 6804 and 6812, they can be widely and flexibly used in G&E EGW, the core of the campus network, enterprises headquarters / branch, the core / aggregation / access network of the industry vertical network, large customers AN, DCN, CDN, MAN.



## Product Feature and Customer Benefit

### Exquisite Structure and Stable System Platform

The rational and advanced design enables the small-sized device ZXR10 6800 to show outstanding performance and excellent reliability. It means to build customers a highly cost-effective network.

- The control plane, forwarding plane and management plane of the high-performance processing engine are independent from each other. The forwarding plane is responsible for service processing and packet forwarding, the control plane complete control signaling, routing processing, the management plane is responsible for the allocation of system resources, Master-slave synchronization management. The service components of forwarding plane are independent distributed processing, can maintain superior forwarding performance in multi-service overlay. Control and forwarding separation eliminates the interaction between them, Independent components, reducing the degree of association between the multi-service. Greatly enhance the overall performance of the system and protect the stability and reliability of the system at the same time.
- The perfect high reliability design. The master, clock, power supply, fan and other key components redundant design; System software component design, component resource independently associated with a small degree, can flexible overlay new function to enhance the stability and flexibility of the system. System with perfect OAM

detection mechanism and FRR, VRRP, link bundled reliability technology to maximize protection of the stability and reliability of service.

- ZXR10 6800 design refining, 200mm depth, cabling and all operations are on the front side; Can be placed in a 300mm deep cabinet; At the same time enhance convenience to maintain greatly reduce the system installation space requirements; can be widely placed in the narrow space such as the outdoor cabinets, base stations, office device cabinets, greatly reducing the user's OPEX.

### Super Integration and All-Service Unified Bearer

ZXR10 6800 have a rich of interface types and multi-service processing capabilities, provide customers with low-cost, unified bearer solutions that maximize the value to users.

- Integrate routing, SW, FW, DPI, NAT, BRAS and other functions, multi-functional in one. The various functions can be loaded according to the actual service needs. Provide flexible platforms to the customer with the optimal deployment of new services.
- Support MPLS. Provide Perfect MPLS solutions which easily extend MPLS to the network edge. Support CES and PW emulation technologies to bear TDM and ATM services.

Support clock synchronization, support accurate clock services.

- Hardware-based QoS, support fine-grained, flexible TM and H-QoS for different users and services to provide a variety of service level guarantee to meet user multi-service access meticulous management needs.
- Support 10GE, GE, FE, E1, POS, CPOS, xDSL, synchronous/asynchronous serial wire port, and 3G/LTE, WiFi wireless port, provide a complete and flexible access capability.

### Fast Deployment and Easy Maintenance

Paying attention to device installation, maintenance, monitoring and information collection and so on. Reduce the operator's workload and difficulty of the work. Fast construction and easy maintenance effectively reduce the customer's OPEX.

- Support USB loading, Centralized batches of version upgrade thru NMS, support TR-069 and Auto-Configuration Server (ACS), Devices zero-touch auto-configuration and batch deployment, enhance remote maintenance capability, simplify device setup and maintenance, greatly reducing the workload of the operation and maintenance.
- Support SQA, Ethernet OAM, BFD and so on detection method for real-time monitoring of the network, to improve the efficiency of operation and maintenance; Support port mirroring, Netflow 1:1 sampling, Support the flow characteristics explicit presentation, Provide an effective means of monitoring to ensure network precisely controlled and operated.
- The powerful visualization NMS provides one-click service creation and one-click information-gathering tool to help network administrators achieve the rapid loading of the service and high-maintenance.

### On-demand Upgrade and Smooth Network Evolution

Hardware and software reconfigurable design concept, Makes ZXR10 6800 easy expansion on-demand of customers or smooth evolution according to the network development trend, to fully protect customers' CAPEX.

- ZXR10 6804 and ZXR10 6812 provide a variety of MPFU (Management and Packet Forwarding Unit) cards with different forwarding performance. Customers can choose the most suitable one on-demand. Then can replace

higher-performance one to smooth upgrade the system at any time.

- No additional hardware to provide high performance NAT ease the public IPv4 address shortage pressure; Support IPv4/IPv6 dual stack, NAT64 and so on mainstream transition technology to help users smooth evolution to next-generation network.
- Powerful open service platform (OSU), any service such as ISAM, Portal Server, unified communications, etc. can be loaded at any time according to user's demand, enhance the added value of the network.

### Professional Guard Builds Safe Networks

ZXR10 6800 provides comprehensive security and defense technology to protect the security of devices and networks.

- Control plane security technologies include classification of the control plane packets, multi-level speed restrictions, multi-level scheduling, traffic suppression, protocol white name, protocol authentication, anti-DDOS attack mechanism and attack trace functions. In this way, there's no chance for the device to break down due to malicious attacks.
- Support hardware state-firewall to isolate the internal network and external network, protect the service-critical data security, control in/out traffic.
- Powerful DPI can always identify the uncertainties in the service traffic, Achieve fine control on services, Help users to create a clean, green and trusted network.
- High-performance IPSec processing engine can provide up to 5Gbps encryption performance, Protect the remote site services efficient, safe and reliable.
- Strong ACL, excellent L2/L3 ACL mixed processing algorithms, up to 32K ACLs capacity (all overlay loads scene, the system performance degradation is less than 30%) and human ACL log statistics management function helps users to easily achieve fine management of various services.
- Powerful SDC support smart dial-up achieve link redundancy. Device can dialed the xDSL or the 3G/LTE link according to the policy, building load balancing and redundancy protection route, to protect the service.

### Energy-saving and Eco-friendly Design

ZXR10 6800 adhering to the green concept, To achieve energy saving in all aspects of the design, R&D, manufacturing,

logistics, engineering, etc. Committed to building a low-cost, low-power, high-efficiency communication network for the customer.

- The intelligent fans change speeds automatically as per the system operating condition. The device reduces the power consumption caused by the fan while giving the precise control to the temperature.
- The industry-leading energy efficiency ratio and low heat dissipation optimize the energy utilization, which reduces the requirement of the working environment.
- The manufacturing strictly follows RoHS standard, using lead-free components and reducing carbon emissions.

## Product Architecture

ZXR10 6800 adopted modular design. Key components including MPFU (Management and Packet Forwarding Unit), PIU (Physical Interface Unit), OSU (Open Service Unit), power supply and fan connected via the bus on passive high-speed backplane. All the components are hot-swappable, can be replaced flexibly.

MPFU is the core component of the system is responsible for system management, protocol control, route processing and packet forwarding. ZXR10 6804 and ZXR10 6812 adopt dual master card redundant design, provided a variety of MPFU cards with different performance for customers to choose on-demand flexibility. The various properties corresponding MPFU models are as follows:

	MPFU	Performance
ZXR10 6802	MPFU-02-A1	2Mpps
ZXR10 6804	MPFU-04-A1	7.5Mpps
	MPFU-04-B0	15Mpps
	MPFU-04-B1	30Mpps
ZXR10 6812	MPFU-12-A1	7.5Mpps
	MPFU-12-B0	15Mpps
	MPFU-12-B1	30Mpps
	MPFU-12-B2	60Mpps

ZXR10 6800 support line interface cards in three sizes: PIU, DPIU<sup>\*1</sup>, MPIU<sup>\*2</sup> (MPFU-slot Physical Interface Unit). The PIU is ordinary interface card, and the DPIU is an enhance interface card; MPIU interface cards occupies a MPFU slots, providing high-density interface card or the OSU card.

ZXR10 6800 series support both AC and DC power supply modes. ZXR10 6804 and ZXR10 6812 power supply module support 1+1 redundancy, support AC and DC hybrid supply.

## Specification

Specification	ZXR10 6802	ZXR10 6804	ZXR10 6812
Physical Size (H×W×D)mm	44 × 442 × 200 (1 RU)	176 × 442 × 200 (4 RU)	264×442×200 (6 RU)
PIU Slot Number	2	4 (5 <sup>*3</sup> )	12 (13 <sup>*3</sup> )
MPFU Number	1	1:1 redundancy	1:1 redundancy
Power Supply Unit Number	1	1+1 redundancy (can AC and DC hybrid supply)	1+1 redundancy (can AC and DC hybrid supply)
Forwarding Capability	2Mpps	7.5M/15M/30Mpps	7.5M/15M/30M/60Mpps
Fixed Interface	1 Console port 1 USB2.0 2GE RJ45 + 2GE SFP	1 Console port 1 AUX port 2 USB 2.0	1 Console port 1 AUX port 2 USB 2.0
Memory	4G	4G	4G
SD Slot	1	1	1
Flash	4G	4G	4G
Major features	<p><b>L2 features</b> : MAC management, VLAN, QinQ, SuperVLAN, Smartgroup , ATM, PPP, PPPOE, HDLC and FR</p> <p><b>IPv4/IPv6</b>: static route, RIP/RIPng, OSPF/OSPFv3, IS-IS/IS-ISv6 and BGPv4/BGP4+.</p> <p><b>Multicast</b>: Static multicast, IGMPv1/v2/v3, PIM-DM, PIM-SM, PIM-SSM, MSDP, PIM-SSM mapping, MLDv1/v2 and multicast VPN</p> <p><b>MPLS features</b>: MPLS L3 VPN, VPLS/HVPLS, PWE3, Inter-AS Option A/B/C and 6vPE</p> <p><b>QoS</b>: classify, Marking, Traffic policing, Congestion management, Queue scheduling, Shaping, QPPB and H-QoS</p> <p><b>Reliability</b>: BFD for everything, VRRP, LACP, MPPP, FRR, PW redundancy and SDC link redundancy</p>		

Specification	ZXR10 6802	ZXR10 6804	ZXR10 6812
	<b>Tunnel technology:</b> MPLS-TE, GRE, IPSec and L2TP <b>Clock synchronization:</b> BITS and GPS <b>Security features:</b> State-firewall, DPI policy linkage defense, Anti-DDOS attacks, Anti-ARP attacks, MAC and IP binding, CPU security, Control plane security, Protocol Encryption, High-performance IPSEC tunnel encryption, RADIUS / TACACS + authentication, uRPF, SSH <b>User access control:</b> BRAS, PPPOE, IPOE, DHCP + WEB, 802.1x; <b>NAT:</b> static NAT, dynamic NAT, PAT, NAT multi-outlet, NAT ALG and NAT log <b>OSU features:</b> ISAM, Portal, IP PBX, etc. <b>IPv6 transitional technology:</b> 6PE, 6VPE, 6in4, 6to4, 4in6, DS-LITE, NAT444, NAT64 and 6rd <b>OAM:</b> Ethernet OAM, Loopback detect, SQA USB loading, DHCP Client, PPPoE Client, unified management, batch management, TR-069, temperature monitor, port mirror, Netflow		
Weight	<5kg	<10kg	<15kg
Typical power consumption <sup>*4</sup>	40W	150W	220W
Rated Power	60W	500W	500W
Output Voltage	DC: -72V ~ -38V / AC:100V~240V		
Operating Temperature	-5°C -45°C		
Storage Temperature	-40°C -70°C		
Operating Humidity	5%-95%		
Storage Humidity	5% -95%		
MTBF/MTTR	50000/0.5h		
Certification	RoHS, FCC, CE and UL		

## Note:

\* 1 ZXR10 6802 don't support DPIU

\* 2 ZXR10 6802 don't support MPIU

\* 3 AS the system only use one MPFU card, the another MPFU slot can be used as a service slot

\* 4 typical power consumption refers to the typical configuration power consumption as the 6802 configured 2GE RJ45 +2 GE SFP +4 CE1 ports, the 6804 configured redundant power supplies, single master, 8GE RJ45 +9 GE SFP ports, 6812 configured redundant power supply, single-master, 36GE RJ45 +12 GE SFP +4 POS3 SFP interface.

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