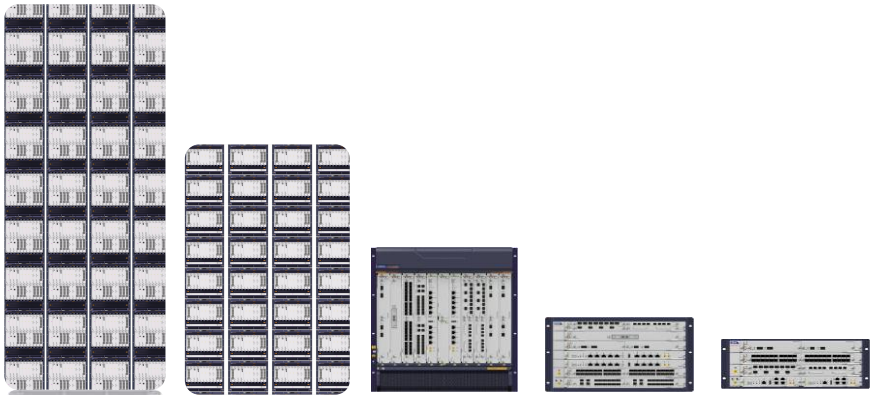
ZXR10 M6000 Series Carrier-Class Router

ZXR10 M6000 series carrier-class router is a brand-new generation Broadband Multi-service Gateway with large capacity and high performance, which made by ZTE particularly for the coming era of tri-networks convergence, mobile internet, IPv6, internet of things and cloud computing. It is the optimal choice for the construction of operator backbone network, MAN, mobile bearer network, internet data center, government network and intranet. With excellent quality, ZXR10 M6000 is dedicated to build highly qualified value-added network for operators.



ZXR10 M6000-16/8/8S/5S/3S series

I. Product Highlights

Ladder for Stepping Forward to the Era of Super-Broadband Network — Software & Hardware Platform with Large Capacity & High Performance

Leading green telecommunication with large capacity, high performance and low power consumption

In order to meet the sustaining increasing requirement of network bandwidth in the era of cloud computing, mobile internet and internet of things, ZTE released the industry-leading 100G bearer network end-to-end solution in 2010. As the core member of ZTE router, ZXR10 M6000 can lead the trend of broadband network with the support of 40G, 100G interface line-speed forwarding. Besides, it can be smoothly upgraded to 400G.

Featuring advanced distributed parallel processing technique and Crossbar space-division switching architecture, ZXR10 M6000 is created a brand-new design for switching architecture and realizes smooth extension of system capacity based upon the existing popular high-end router hardware system architecture, which can effectively protect customer's investment.

The philosophy of green environmental protection is implemented all the way through every aspect of system design. The extensive application of green power technologies like saving technology including fan with intelligent multi-level variable speed, line card capable of intelligent initiation, automatic adjustment of port-based power consumption, and intelligent power supply efficiently reduce equipment power consumption and save operation costs in building the next-generation green bearer network.

Flexible sub/mother card architecture and rich interfaces enable freewheeling networking

ZXR10 M6000 uses flexible sub/mother card architecture and the universal mother card module can connect with any type of sub-interface card to reduce

operators' equipment costs. By flexible sub-card configuration, ZXR10 M6000 can provide high-density and diversified WAN and LAN interfaces, which makes the networking mode more flexible and provides customers with inexpensive and characteristic solutions to meet network individual demands.

Modular and distributed software system with high reliability enables sustaining services

ZXR10 M6000 uses modular and distributed software system with high reliability. Featuring separated top/bottom architecture between system kernel and service module isolated with each other, the system kernel can keep high reliable running and avoid mutual influence with service modules.

Advanced philosophy in system design shows customer oriented. Featuring modular software system, flexibly excellent loading and unloading for service module to realize service upgrading with non-stop services, ZXR10 M6000 can help operator quickly grasp the market chances to flexibly extend new services.

Base to Promote Infinite Evolution of Services — Service Innovation Platform with Strong Extension & Super Flexibility

Unified service control with integrated BRAS and Router services

Complying with the trend of full-service integration, ZXR10 M6000 integrates the Router and BRAS services perfectly on the same hardware platform. Under the condition of meeting current service requirement, it can accommodate to the emerging service demand and realize flexible service deployment.

Complying with the trend of network integration, ZXR10 M6000 focuses on network construction with low costs and high quality. The platform integrating BRAS & Router together known for large capacity and high performance, realizes network flatness, simplifies network structure, saves cost on network construction and operation, and meets the high efficient bearer requirements of internet of things, mobile internet and cloud computing services.

As a brand-new Broadband Multi-service Gateway, ZXR10 M6000 integrates major customer gateway, public service gateway, NAT gateway, security gateway and IP RAN service to help operator build full-service MAN.

Fast and Flexible Service Deployment Ensures Precise Operation

ZXR10 M6000 innovative service platform can offer rich service access modes including IPoE, PPPoE, IP leased-line, enterprise VPDN, ATM and TDM, etc. PWE3 technology can realize end-to-end service emulation for traditional ATM and TDM services. MPLS L2/L3 VPN hybrid networking is capable of satisfying the flexible access requirements in different scenarios.

Under the trend of integration of three networks, IPTV greatly enhances the development space for broadband and broadcasting television market to offer strong power for the development of global telecommunication industry. Complying with the trend of network integration, ZXR10 M6000 focuses on safer, more efficient, more accurate and more reliable video service bearer to help customers upgrade market profit space by using of the exclusive IPTV studio control function, fast channel change(FCC) and in-built video card mechanism, session-class IPoE ability and multicast hot backup technology.

1588v2+Synchronous Ethernet function can provide precise time synchronization for base stations under the condition of large-scale deployment of mobile service.

In-built service identification module can accurately distinguish user class and service type. 5-HQos can satisfy differentiated service demand, and help operators to achieve business fine operation.

Unified deployment platform for IPv6 service enables smooth network evolution

As the quick growth of mobile internet and internet of things, IPv6 has become the fundamental solution to respond exhausting IPv4 address. ZTE actively promotes the perfection and commercial capability of IPv6 technology and is becoming the main force in IPv6 standards drawing up.

Born in the age of rapid development of IPv6 technology, with foresight ZXR10 M6000 focuses on building a unified platform for IPv6 service deployment and implements smooth network evolution.

Based upon the urgent requirement of IPv6 evolution in domestic and overseas operators market, leading the global latest progress in IPv6 technology, ZTE has released rich solutions including Dual Stack+CGN, 6RD, DS-Lite, NAT444, PNAT and NAT64+DNS64 to offer optimal transition solution for different operators.

II. Product Architecture

Featuring the rack-style structure popular in the industry, modular architecture and integrated chassis design, hot-swappable for all line-cards and components, ZXR10 M6000 series carrier-class router has flexible expandability.

The key system components include Main Processing Unit (MPU), Switch Fabric Unit (SFU), Switch Router Unit (SRU), Service Processing Unit (SPU), Packet Forwarding Unit (PFU) and Flexibly Physical Interface Unit (PIU). Among them, SPU focusing on more powerful service capability can offer customers with high-performance NAT, DPI and IPSec value-added services. PFU and PIU can offer rich interfaces to realize multi-service access.

The port density of ZXR10 M6000 fully meets the requirements of large-capacity node networking. The entire equipment supports up to 16×100GE, 16×40G POS, 128×10GE, 128×10G POS and 768×GE ports.

Interface model		M6000-16	M6000-8	M6000-8S	M6000-5S	M6000-3S
POS	40G	16	8	N/A	N/A	N/A
	10G	128	64	32	20	12
	2.5G	128	64	128	80	48
	622M	256	128	256	160	96
	155M	256	128	256	160	96
CPOS	155M	128	64	128	80	48
Ethernet	100G	16	8	8	5	3
	40G	16	8	8	5	3
	10G	128	64	64	40	24
	GE	768	384	384	240	144
	FE	768	384	384	240	144
ATM	622M	256	128	64	40	24
	155M	256	128	256	160	96
E1/CE1	N/A	N/A	N/A	768	480	288
CE3/DS3	N/A	N/A	N/A	128	80	48

III. Product Specification

Technical Specification		M6000-16	M6000-8	M6000-8S	M6000-5S	M6000-3S
Size (W×H×D)	DC	442×1686×600	442×1197.3×600	441×619.5×749.4	442×308.3×740	442×175×738
	AC	442×1686×600	442×1197.3×600	N/A	442×352.8×740	442×219.4×738
Number of slots		22	13	12	7	5
Number of service slots		16	8	8	5	3
Switching capacity		3.84Tbps	1.92Tbps	1.92Tbps	900Gbps	480Gbps
Main control system redundancy		1:1	1:1	1:1	1:1	1:1
Switching system redundancy		3+1	2+1	3+1	1+1	N/A, three slots are interconnected with full mesh structure.
Major service features		L2 Feature • MAC management, Vlan, QinQ, SuperVlan, Smartgroup, ATM, PPP、HDLC、FR、POS interface binding, Synchronous Ethernet, 1588v2. L3 Feature • IPv4 unicast, IPv4 multicast, IPv6 unicast, IPv6 multicast. MPLS and TE • MPLS L2/L3 VPN, 6vPE, MPLS-TE, DS-TE, TE FRR. QoS • Classification, label, traffic policing, congestion control, queue scheduling, shaping, QPPB and H-QoS. BRAS • IPoEv4/v6, PPPoEv4/v6, IP Host, IPoA, PPPoA, L2TP, AAA, multi-system hot backup Reliability • Graceful restart (GR), non-stop route (NSR), ISCU, FRR, PW redundancy. Tunnel • MPLS static tunnel, GRE tunnel, IPSec tunnel. Security • Attack precaution, CPU security protection. Operation and Maintenance • CLI, GUI(Netnumen N31NM), MPLS VPN NM, QoS NM and TE NM. OAM • Ethernet OAM, MPLS OAM, SLA tool(SQA). Special Services • NAT, IPSec, DPI.				
Weight(Full-configuration)		<210kg	<145kg	<95kg	<55kg	<35kg

Technical Specification	M6000-16	M6000-8	M6000-8S	M6000-5S	M6000-3S
Power rating of power supply module	DC:8000W power supply module 1+1 redundancy AC:2000W power supply module 4+4 redundancy	DC:4000W power supply module 1+1 redundancy AC:2000W power supply module 2+2 redundancy	DC:3000W power supply module 2+2 redundancy	DC:3000W power supply module 1+1 redundancy AC:2675W power supply module 1+1 redundancy	
Power supply (DC/AC)	DC:-60V~-40V (voltage rating: -48V) AC:200V~240V, 50~60Hz		DC:-40V ~ -72V (voltage rating: -48V) AC:100V~240V, 50~60Hz (M6000-5S/M6000-3S)		
Noise	<70 dB				
MTBF/MTTR	>400000h / <0.5 h				
Operating Environment Requirement	Temperature: -5℃~+45℃; Humidity: 5%~90% , Non-condensing				
Altitude	<5000 m				
Aseismatic Degree	9 Level				
Certificate of Certification	CE, FCC, RoHS, MEF9&14, MPLS & Carrier Ethernet World Congress 2010 multi-vendor Interoperability test				

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