

# ZXR10 3900E Series Easy-Maintenance Routing Switch

## Change Start Now

### Overview

As fixed and mobile networks are converging and services are developing, operators are constantly putting greater demands on the operation and maintenance of their networks, to simplify network management, and to make it more efficient. Operators want to cut the operating costs of the network through simple yet efficient methods. Besides that, with further development of the Internet terminal, requirements of Super High Speed Internet are ever-increasing, Gigabits interfaces are necessary in the aggregation node, even in access node.

### Features

ZXR10 3900E series Easy-Maintenance switch adopts high-speed ASIC forwarding chips. It supports complete family of Ethernet protocols, complete L3 protocols, efficient QOS priority mechanisms and flexible management mechanisms. With high-density FE ports, it provides the required access and aggregation features of FE interface for IP Metro Ethernet, campus networks and IP RAN.

ZTE's 3900E Series Switch also focuses on the Last-mile Unattended Center Office (LUCO) and adopts design principles specifically to optimize the operational experience for maintenance staff, by providing easy management features. ZTE's 3900E Switch includes: ZXR10 3928E, ZXR10 3928E-FI and ZXR10 3952E.

#### EasyAlarm

Alarm input and output interfaces are introduced in 3900E for monitoring physical information, by detectors for temperature (overheating sensor), humidity (water penetration) infrared detector (unauthorized access), and power breakdown warning.

#### EasyPower

Dual independent and hot-swappable power modules ensure highest level customer networks reliability. Moreover, it greatly reduces the time to fix equipment problems and the number of backup switches.

#### EasySpace

With only 220mm depth, ZXR10 3900E switch can be installed in 300mm deep rack or 600mm-deep rack in back-to-back pattern.

### 3900E Easy-Maintenance Series

Figure 1. ZXR10 3928E



Figure 2. ZXR10 3928E-FI



Figure 3. ZXR10 3952E



With tight architecture, all cables are accessible from front panel, which greatly saves operator's investment in equipment room.

### EasyButton

In order to ease operation pressure, the Mode Switching Button (M-button) was developed. By pressing a simple button, the network administrator can obtain the following information in just some seconds: CPU usage, memory usage, uplink and downlink bandwidth of the network, whether there is a port blocked in the ring-topology or not, port link rate, where is the network storm taken, whether the port has learnt the user MAC address or not, whether the connectivity to network management server is good or not. Moreover, CRC Errors can be displayed to show the physical status of line fiber or cable. M-button is a ZTE's patent technology and is widely adopted in ZTE E series switch families.

### EasyManager

With ZTE powerful network management system NetNumen N31 or Easy manager in place, the ZTE 3900E series Switch allows fetching its own software and configuration automatically. ZTE network management system also supports network topology discovery, digital optical module diagnose, VLAN, service label and subscriber's IP address distribution and the MAC/port binding automatically. All these can significantly relieve stresses for network operation and maintenance. In addition, abundant reports provide vital information for the operational staff to gather statistics and conduct analysis about the network resources.

## Customer Benefits

### Enhanced Service Level Agreements (SLA)

ZXR10 3900E's EasyOAM features can help Operators generate more revenue by offering SLAs guaranteed services. These SLAs extend QoS contracts previously available only for Fast Ethernet, Gigabit Ethernet to new and advanced broadband data services such as Committed Information Rate (CIR), Peak Information Rate (PIR).

### Future Proofed

While increasing the bandwidth of the new service portfolio, the ZXR10 3900E extends service providers' investment in legacy network equipment by scaling its capacity as customer demands grow, without forklift upgrades. With significant high-density and high-speed capabilities, ZXR10 3900E's EasyUpdate features provide rapid service deployment and hardware hot-swap and update to meet the future service and QoE requirement.

### EasyOAM

ZTE 3900E series switch supports checking OAM links at 100ms interval. So that, when 3 times OAM messages are lost, the switch over be triggered, and the end-to-end carrier-class switchover is guaranteed.

### EasyUpdate

The operator could hot swap the subcard to support optical interface or RJ-45 interface to meet the flexible access node interface requirements. Besides that, the uplink slot supports 4 FE colored SFP cad, 4 FE RJ-45 or 4 GE SFP+ card to provide better flexibility.

### EasyGreen

ZTE 3900E switch uses industry-leading 40nm and 65nm chip. In addition, the latest IEEE 802.3az EEE dynamic power consumption control technology is adopted. ZTE switch makes sure that our products always comply with RoHS, WEEE standards.



### CapEx Reduction

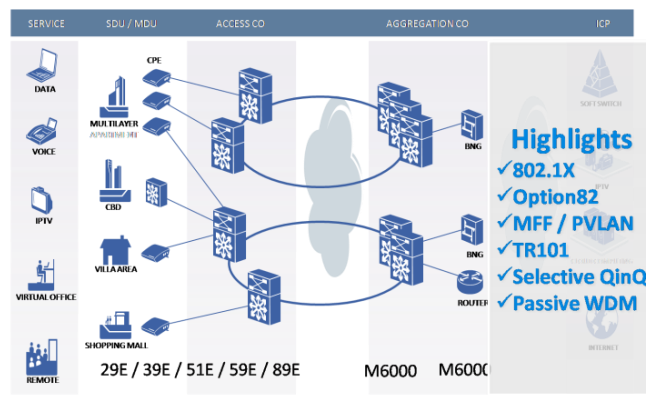
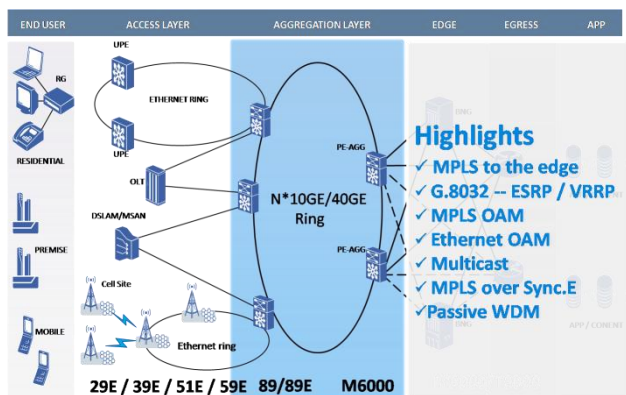
Benefiting from EasyUpdate, the Service providers provide not only fixed service such as High Speed Internet, Voice, IPTV and VoD, but the mobile service. ZXR10 3900E provides a consolidated network infrastructure, to transform the multiple overlay networks to an unified bearer networks, which cut the Capital Expenditures (CapEx) by reducing the total number of network elements.

### OpEx Reduction

ZTE Innovative ZXR10 3900E focuses on Easy Maintenance to reduce the operators' stress on the networks elements, especially in the Unattended Center Office (UCO). The features of EasyManager might reduce the time for the operator to introduce new service to market to keep the most profit. ZTE Corporation pays the sustained effort on the-cutting-edge technology and innovation to further cut down the OpEx of the networks.

## Applications Scenario

With lots of Easy features, ZXR10 3900E show its value in many operator scenarios, such as: to edge, super high speed internet access, broadband high-reliability aggregation/access, IPTV, NGN, 2/3G IP RAN and LTE Backhaul. Furthermore, it also proves capability to act as the aggregation and access switch in large or medium-size business network, IPv6 aggregation/access switch.



## Product Architecture

ZXR10 3900E has following three switch types: 3928E, 3928E-FI and 3952E. All 3900E series switches provide 1 FE management port, 1 Console port and one alarm in/out port. The service interface combinations of these three switches are listed below:

**3928E-FI: 24\*FE optical + 4\*FE/GE RJ-45/optical uplink**

**3928E: 24\*FE RJ-45 + 4\*FE/GE RJ-45/optical uplink**

**3952E: 48\*FE optical + 4\*FE/GE RJ-45/optical uplink**



	3928E	3928E-FI	3952E
Power Slot	2	2	2
Fan Slot	-	-	1
Fixed FE RJ45	24	-	-
Fixed FE SFP	-	24	-
Ext. Slot	1	1	1+1+4

	FE RJ-45	FE SFP	GE SFP
RS-39EC-4GE-SFP	-	-	4
RS-39EC-4FE-SFP	-	4	-
RS-39EC-4GE-RJ45	4	-	-
RS-3952E-MCS-SF (3952E)	-	16	-
RS-39EC-8FE-SFP (3952E)	-	8	-
RS-39EC-8FE-RJ45 (3952E)	8	-	-

## Technical Specification

Specifications	3928E	3928E-FI	3952E
L2 Protocol	IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x; STP, MSTP, RSTP; VLAN, QinQ, Selective QinQ; ITU-T G.8031, G.8032; Mac Force Forwarding		
L3 Protocol	Controllable Multicast, PIM-SM/DM/SSM and IGMPv1, v2, v3; RIP1/2, OSPF, BGP, IS-IS; RIPng, BGP4+, OSPFv3 and IS-ISv6.		
OAM	IEEE 802.3ah, 802.1ag		
Security Feature	CPU anti-attack (virus) and overload/rhythm protection, virus feature identification filtering, STP root guard, BPDU and APR attack guard, uRPF, IS-IS/ OSPF/RIPv2/BGPv4 MD5 cryptogram checking, IP source guard		
Management Interface	RS232, Local Command Line(CLI), Remote Telnet, Standard SNMP, NetNumen N31, Cluster Management(ZGMP), SSHv2.0, Local and Remote Authentication of User		
Physical Dimensions (H×W×D)/mm	43.6×442×220		88.1×442×220
Maximum Weight	<6 kg		<10 kg
Power Supply	AC : 100V~240V, 50Hz ~60Hz; DC: -57V~-40V		
Maximum Power	<22W(full load)	<38W(full load)	<65W(full load with optical)
MTBF/MTTR	>100,000 hours/<30 minutes		
Operating Environment	Temperature:-5°C~+45°C; Humidity:10%~90% (non-condensing)		
Certificate of Certification	CE, FCC, UL, CB, IRAM, C-tick, RoHS, WEEE, MEF 9&14, IPv6 Gold, EANTC Interoperability Test, Secure End-user Connection(SEC)		

### China

NO. 55, Hi-tech Road  
South, ShenZhen, P.R.China  
Tel: +86-755-26770000  
Postcode: 518057

### West Europe

114 rue galliéni, 92100Boulo  
gne Billancourt, France  
Tel: +33 (0)1707 25 700

### North America

Paseo de la Reforlma 404,  
Floor 13 Col,Juarez,Cuauhte  
moc, Mexico,D.F.  
Tel: +52 55 52072786  
Fax: +52 55 52070020

### South Africa

Block D, Lincoln Wood office  
park, woodland drive, Wood  
mead, JHB, SA  
Tel: +27-11-6565093  
Fax: +27-11- 6565087

For more information about ZTE office, please visit website [http://www.zte.com.cn/en/about/global\\_sales\\_offices/](http://www.zte.com.cn/en/about/global_sales_offices/)

ZTE CONFIDENTIAL: This document contains proprietary information of ZTE and is not to be disclosed or used without the prior written permission of ZTE. Due to update and improvement of ZTE products and technologies, information of the document is subjected to change without notice.