

## SR-M3 & SR-M5 Series

### Next-Generation Multicore Multiservice Routers



## SR-M3 & SR-M5 Series

### Product Overview

SR-M3 and SR-M5 Series are the next-generation multiservice switching router platforms . The router platforms are of high performance by integrating a 64-bit multi-core processor, a gigabit switching chip and FPGA into one solution.



**SR-M3-61**



**SR-M5-80**

SR-M3 and SR-M5 Series have many models such as SR-M3-61, SR-M5 and SR-M5-80. Each model is with 4 gigabit ports, 1 USB2.0 port and 6 to 12 HIC/HIM expansion slots. They support more than 10 kinds of expansion modules or interfaces such as Ethernet, E1, T1, Serial, Async, 3G and 4G.

SR-M3 Series and SR-M5 Series are equipped with the self-owned operating system, and provide rich software functions such as routing, switching, safety, VPN, voice and wireless function, making themselves a real multiservice unified platform.

With their powerful processing ability and expansibility, varied software functions and hardware modules, SR series can meet different networking requirements of government, financial institutions, arms, operators or enterprises.

## Product Characteristics

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### ➤ High Performance

SR-M3 and SR-M5 Series are driven by the 64-bit dual-core processor with specialized gigabit ASIC switching chip and FPGA components, which enables the whole hardware platform to run on the high-speed Ethernet frame. The innovative design endows BSR with a super processing capability, providing a guarantee for upper-layer software functions.

### ➤ Strong Expansibility

With the switching core, SR-M3 and SR-M5 Series can expand its external interface, slot and module without subjecting to the total CPU resource. The switching chip provides sufficient internal channels of high-bandwidth for the BSR equipment, so SR-M3 and SR-M5 series' expansibility has far surpassed that of the traditional modularized router.

### ➤ Energy-saving Advantage

SR-M3 and SR-M5 Series adopts the new-generation hardware chip in consideration of energy saving while guaranteeing its strong processing capacity. Compared with the mainstream devices in the industry, power consumption of the BSR router is reduced by 15% to 20%, which both reduces the device maintenance cost and accords with the low-carbon idea. SR-M3 and SR-M5 Series is also equipped with the environment friendly maglev mute fan.

### ➤ Varied Protocols

SR-M3 and SR-M5 Series supports Layer 2 link protocols including HDLC, PPP and dot1q; static routers; policy routers; and dynamic routers such as RIP, OSPF, BGP, BEIGRP. These routing protocols are well compatible with the devices manufactured by the mainstream vendors in the industry. Besides, SR-M3 and SR-M5 Series supports integration of multiple services such as routing, switching, voice, safety and wireless, which meets the requirement of complicated network construction.

### ➤ New Services

SR-M3 and SR-M5 Series supports the MPLS characteristics and the MPLS-based layer-2/layer-3 VPN technology, which realize the transparent Ethernet transmission service and the

flexible enterprise interconnection. SR-M3 and SR-M5 Series supports IPv6 data forwarding, routing protocols and multicast routing protocols; SR-M3 and SR-M5 Series also supports the IPv4/IPv6 protocol stack and the interconnection technology, which makes the existing networks smoothly upgrade to IPv6.

➤ **Secure Service Access**

SR-M3 and SR-M5 Series supports selective ACL firewall filtration technology, NAT, VPNs such as IPsec/L2TP/PPTP/GRE and security technologies such as AAA, Radius, PAP/CHAP.

➤ **Traffic Management Policy**

SR-M3 and SR-M5 Series supports varied queues including FIFO, PQ, CQ, CBWFQ, LLQ, WFQ, DSCP, IP Precedence and CAR.

SR-M3 and SR-M5 Series support self-developed traffic control and service management policy (GBSC), which can better real-time arrange and monitor your data traffic.

➤ **Flexible Management and Maintenance**

SR-M3 and SR-M5 Series is convenient in managing and monitoring the network by using the in-band and out-band management tools such as Console, Telnet, SSH and SNMP; SR-M3 and SR-M5 Series also support Chinese -English interface.

## Hardware Specifications

Model		SR-M3-61	SR-M5	SR-M5-80
Device Interface	CON	1	1	1
	AUX	1	1	1
	USB	1	1	1
	GE-Combo	1	/	/
	GE-TX	3	4	4
Expansion Slots	HIC slots	4	4	4
	HIM slots	6	8	8
	Encryption engine	built-in	built-in	built-in
AP access Storage	Forwarding Rate	2Mpps	2Mpps	8Mpps

	FLASH	32MB	32MB	32MB
	DRAM	512MB	512MB	2GB
	CF expansion	one	one	one
Peripherals Index	Fan	Floating	Floating	Floating
	Dual power supply	AC/DC, hot-swap	AC+RPS / DC+RPS	AC+RPS / DC+RPS
	Voltage	100~240VAC	100~240VAC	100~240VAC
	Power consumption	≤180W	≤180W	≤180W
	Dimensions mm (WxDxH)	443x 415x 88	443x 415x 132	443x 415x 132
	Operating temperature	0°C ~ 50°C	0°C ~ 50°C	0°C ~ 50°C
	Operating humidity	5%-95% (non-condensing)	5%-95% (non-condensing)	5%-95% (non-condensing)

## Software Characteristics

Item		SR-M3-61	SR-M5	SR-M5-80
Link Protocol	LAN	ARP, ARP proxy, free ARP		
	WAN	PPP, Multilink-PPP, PPPoE (Client/Serv) HDLC		
Network Protocols	Routing	Static route, direct route, default route RIPv1/v2, OSPFv2, BGPv4 PBR FastSwitch, Load-Balance		
	Multicast	IGMP PIM-DM, PIM-SM		
	IP service	ICMP, TCP, UDP, IP Option NAT, PAT, Port-MAP, Private-Service, ALG Ping, TraceRoute, Nslookup IP ACL, IMP filter, Fast-Access DHCP Client/Serv/Relay DNS, DNS host, DNS Proxy, DDNS		

		(PeanutHull/DynDNS/CTC) Helper-Address, UDP Helper IP unnumber, DDR Keepalive, PDP (compatible with CISCO) NetFlow, IP Accounting TFTP Client/Serv, FTP Client SNTP, job/schedule PNP ALIAS Verse telnet, VTY binding
	MPLS	AToM, VPLS, MP-BGP, VRF L2VPN, L3VPN
	IPv6	IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL, IPv6 (approved by IPv6 Phase II) IPv6 QoS IPv6 transition: NAT-PT, IPv6 tunnel, 4 over 6 IPv6 tunnel: IPSec v6, GRE, 6to4, ISATAP IPv6 route: IPv6 static routing, RIPng, OSPFv3, BGP4+
Reliability	Backup	Interface backup Floating route backup E-Backup, Keepalive Ethernet remote monitoring VRRP, HSRP bandwidth based load sharing and backup traffic based load balancing and backup
	BFD	BFD for RIP, OSPF, BGP, MPLS and VRRP
QoS	Congestion management	FIFO, PQ, CQ, WFQ, CBWFQ
	Congestion avoidance	WRED/RED
	Traffic shaping	GTS
	Features	GBSC, Layer7 filter
	Flow classification	ACL traffic classification IP Precedence traffic classification DSCP traffic classification MAC address classification 802.1P classification

Switching	Switching	802.1p CoS, 802.1Q VLAN, Keep alive, port mirror, broadcast/multicast storm control
Security	AAA	Authentication, Authorization, Accounting enable, local, Radius, Tacacs+ PAP, CHAP, MS-CHAP
	Firewall	ASPF state detection Defend against SYN flood, UDP flood or ICMP flood ARP attack protection, ARP-SCAN and DHCP-Snooping Prevention of Ping of Death, Tear-drop, Land-Based, Win Nuke, Ping Sweep, ARP attack and IP-Spoofing
	VPN	IKE, IPSec, DMVPN, EZVPN L2TP, PPTP, GRE VPN nesting
3G/4G	Standard	WCDMA, CDMA2000, TD-SCDMA, TD-LTE, FDD-LTE
Management	Network	SNMP, MIB, SYSLOG, RMON, HTTP management
	local	CLI management and file system management
	Login	Console/Telnet/VTY/SSH log-on mode

## Networking and Applications

### 1) Typical application for small or medium WAN aggregation

SR-M3/SR-M5 routers are recommended to apply in private network aggregation of governments, financial institutions and operators.

The CPOS optical interface can be used to trunk multiple low-level ports and branches for each CPOS optical interface can connect up to 63 websites. As to SYSTRON SR-M3, it is recommended to use 4 CPOS optical interfaces to realize the aggregation of up to 250 branches. Additionally, users also can select the GE/E1 port to access the MSTP or E1/SDH hi-speed private network, realizing the aggregation.

To obtain more bandwidth, the CPOS timeslot binding can be adopted at the aggregation of the upper-layer networks. Of course, the new-model MSTP access is also supported; 1 or 2 GE ports can be used to conduct the connection of the local service and the office data.

It is recommended to enable routing protocols such as OSPF and PBR to simplify network management and interconnection; meanwhile if the QoS queue participates together, the result would be better; in real networking, you can introduce the hot-standby solutions such as dual-host VRRP according to actual needs to enhance the reliability of the whole router.

## 2) Typical VPN networking

In the e-government network, MPLS is increasingly applied. With its strong processing capacity, SR-M5 Series can be deployed in MPLS networks of a county, even a city as PE, CE or MCE.

Meanwhile, the four ports of SR-M5 Series is very suitable for the interconnection and establishment of MSTP.

## Ordering Information

Model	Description
BSR 5800-80	SR-M5-80 high-performance multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 4 GE Base-T ports, built-in encryption engine, 1 CF slot, 4 HIC slots and 8 HIM slots, "AC+RPS" power supply)
SR-M5	SR-M5-80 high-performance multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 4 GE Base-T ports, 1 CF slot, 4 HIC slots and 8 HIM slots, "AC+RPS" power supply)
SR-M3-61	SR-M3-61 high-performance modularized multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 3 GE Base-T ports, 1 GE combo SFP/Base-T ports, built-in encryption engine, 1 CF slot, 4 HIC slots and 6 HIM slots, dual power supply (optional))
BSR Private HIC Modules	
HIC-1GE-TX	1-port 10/100/1000M TX interface card
HIC-1GE-TX/SFP	1-port 10/100/1000M combo TX/SFP interface card (RJ45/SFP)
HIC-2GE-TX+SFP	2-port 100/1000M Ethernet interface card (RJ45+SFP)

DIC-8GES-TX	8-port 10/100/1000M Ethernet interface card (RJ45)
HIC-1E1B	1-port fractional E1 interface card
HIC-2E1B	2-port fractional E1 interface card
HIC-1T1	1-port T1 card
HIC-2T1	2-port T1 card
HIC-1TB	1-port synchronous serial interface card (V28/V35)
HIC-2TB	2-port synchronous serial interface card (V28/V35)
HIC-8ASY	8-port asynchronous serial interface card
<b>BSR HIM/DIM Modules</b>	
DIM-16FES-TX	16-port 10/100M L2 TX switching module
HIM-4T	4-port synchronous serial interface card (V28/V35)
HIM-4E1	4-port fractional E1 interface module
HIM-4CE1	4-port channelized CE1 interface module
HIM-8CE1	8-port channelized CE1 interface module
HIM-16CE1	16-port channelized CE1 interface module
HIM-4T1	4-port T1 module
HIM-4CT1	4-port channelized T1 module
HIM-8CT1	8-port channelized T1 module
HIM-16CT1	16-port channelized T1 module
HIM-1CE3	1-port E3 module
HIM-1CPOS-OC3-B	1-port channelized 155M CPOS module (SFP)
HIM-1POS-OC3-B	1-port unchannelized 155M POS module (SFP)
HIM-2POS-OC3-B	2-port unchannelized 155M POS module (SFP)