

## TERRABIT NEXT-GENERATION MULTISERVICE ROUTERS



**TR31-800**



**TR51-800**

### MAIN CHARACTERISTICS

#### Powerful Performances

TR31-800 and TR51-800 are driven by the 64-bit dual-core processor, the private gigabit ASIC switching chip and FPGA components, enabling the whole hardware platform of the whole router to run on the hi-speed Ethernet frame. This innovative design attributes BSR with an innate extra powerful processing ability, provides a guarantee to the upper-layer software functions.

#### Strong expansibility

Because built on the basis of switching core, B TR31-800 and TR51-800 can expand their external interfaces, slots and modules without any limitation from the total CPU resources. The switching chip guarantees that the whole BSR router is provided with sufficient and broadband internal channels, making the expansibility of BSR routers exceed that of traditional modularized routers.

#### Excellent power-saving ability

TR31-800 and TR51-800 adopt the new-generation hardware chip which can guarantee the powerful processing ability and meanwhile save power. The power consumption of a whole BSR router is reduced by 15% to 20% compared with the mainstream devices in this industry. The long-term users can save the maintenance cost, which carries out the nationally advocated low-carbon idea. TR31-800 and TR51-800 are also equipped with the magnetic-suspension mute fan, which makes them more environmentally friendly.

#### Varied protocols

They support dynamic routes (RIP, OSPF and BGP), static route and policy route, so they can interconnect the equipment of the main manufacturers in this industry. Further more, this series supports the integration of multiple services like routing, switching, voice, safety and wireless, so they can meet the requirements of complicated network establishment.

#### New services

The MPLS characteristics, and the MPLS-based layer-2/ layer-3 VPN technology are supported so that the transparent Ethernet transmission service and the flexible enterprise interconnection are realized. IPv6 data forwarding, routing protocols and multicast routing protocols are all supported; also the IPv4/IPv6 protocol stack and the interconnection technology are supported, so the existing networks can be smoothly upgraded to the IPv6 networks.

#### High security

They support flexible ACL firewall filtration technology, the NAT technology, multiple VPN technologies such as IPSec/L2TP/PPTP/GRE, and multiple security technologies such as AAA, Radius, TACACS+, PAP and CHAP.

#### Flow management policy

Varied queues are supported such as FIFO, PQ, CQ, CBWFQ, LLQ, WFQ, DSCP, IP Precedence, RTS, RSVP and CAR, so key services can be guaranteed with a reliable bandwidth and users' bandwidth will be utilized more efficiently.

TR31-800 and TR51-800 support self-innovated GBSC so that they provide a better way to plan and supervise data flux.

#### Flexible management and maintenance

They provide a lot of in-band or out-band management tools such as Console, Telnet, SSH and SNMP, so the management and monitoring of network can be facilitated; they also support Chinese- and English-version website pages, so home or oversea users can easily handle website pages.

## TECHNICAL PARAMETERS

Model		TR31-800	TR31-800-60E	TR51-800	TR51-800-80
Integrated ports	Console	1			
	AUX	1			
	USB2.0	1			
	GE	4			
	FE	/	48, LAN	/	
Expansibility	HIC	4			
	HIM	6	2	8	
	Encryption	Built-in			
Performance and Capacity	PPS	2M			4M
	BootROM	512K			
	Flash	32MB			
	SDRAM	512MB to 1GB			2GB to 8GB
	CF slot	1			
Peripherals	Fan	Magnetic Bearing			
	Dual power	AC/DC+RPS		2(AC/DC+RPS)	
	Voltage	100~240V AC or -36~-72V DC			
	Consumption	≤180W			
	Size	19-inch, 2U		19-inch, 3U	
Environment	Working	0°- 40°; 10%-85% no condensation			
	Storage	-20°- 65°; 5%-95% no condensation			
Protocols and Functions	LAN	ARP, ARP proxy, Gratuitous ARP			
	WAN	PPP, Multilink-PPP, PPPoE (Client/Serv)			
		ISDN			
		X.25			
		HDLC			
	IP routing	Static route			
		RIPv1/v2, OSPFv2, BGPv4			
		PBR			
		FastSwitch, Load-Balance			
	Multicast	IGMP			
		PIM-DM, PIM-SM, PIM-SSM			
	IP function	IGMP			
		ICMP, TCP, UDP, IP Option			
		NAT, PAT, Private-Service, ALG			
		Ping, TraceRoute, DNSlookup			
		IP ACL, MAC ACL, Fast-Access			
		DHCP Client/Serv/Relay			
		DNS, DNS host, DNS Proxy, DDNS			
		Helper-Address, UDP Helper			
		IP unnumbered, DDR			
		Keepalive, PDP (compatible with CISCO), BFD			
		NetFlow, IP Accounting			
		TFTP Client/Serv, FTP Client			
SNTP, job/schedule					
MPLS	MP-BGP, VRF				
	L2VPN, L3VPN				
	MPLS TE*				
IPv6	IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL, IPv6				
	IPv6 QoS				

		IPv6 transition: NAT-PT, IPv6 tunnel, 4over6
		IPv6 tunnel: IPSec v6, GRE, 6to4, ISATAP
		IPv6 route: IPv6 static route, RIPng, OSPFv3, BGP4+
<b>Reliability</b>	Balance and Backup	Interface backup
		Routing backup
		Flow based load balance
		Weight based load balance
		VRRP
	BFD	BDF for Static route, RIP, OSPF, BGP, MPLS and VRRP
<b>QoS</b>	Flow classification	ACL, IP Precedence, DSCP, 802.1P
	Queue policy	FIFO, PQ, CQ, WFQ, CBWFQ, LLQ
	Advanced	GBSC, Layer7filter
<b>Switching</b>	L2 switching	802.1Q VLAN, 802.1x
		Keepalive, port mirror, broadcast/multicast storm control
<b>Network security</b>	AAA	Authentication, Authorization, Accounting
		enable, local, Radius
		PAP, CHAP, MS-CHAP
	Firewall	ACL, NAT
		SYN flood, UDP flood or ICMP flood
		Gratuitous ARP, ARP-Scan and DHCP snooping
		Prevention of Ping of Death, Tear-drop, Land-Based, WinNuke, PingSweep, ARP attack and IP-Spoofing
	VPN	IKE, IPSec
		L2TP, PPTP, GRE
VPN nesting		
<b>VoIP</b>	Interface	FXS
	Protocol stack	SIP
	Codec	G.711A law, G.711U law, G.723R53, G.723R63, G.729a, G.729R8
<b>3G</b>	Mode	WCDMA, CDMA2000, TD-SCDMA
<b>Management and Maintenance</b>	Logon	Console/Telnet/VTY/SSH logon mode
	Local	CLI management and file system management
	Remote	SNMP/MIB/SYSLOG/RMON/HTTP management

## ORDERING INFORMATION

<b>TR Chassis</b>	
TR51-800-80	Modularized multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 4 GE TX, 1 CF slot, 4 HIC slots and 8 HIM slots, "AC+RPS" power supply)
TR51-800	Modularized multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 4 GE TX ports, 1 CF slot, 4 HIC slots and 8 HIM slots, "AC+RPS" power supply)
TR31-800-60E	Modularized multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 4 GE TX ports, 48 10/100M switching ports, 1 CF slot, 4 HIC slots and 2 HIM slots, dual power sources for power supply, hot-swap)
TR31-800	Modularized multiservice router (1 console port, 1 AUX port, 1 USB2.0 port, 4 GE TX ports, 1 CF slot, 4 HIC slots and 6 HIM slots, "AC+RPS" power supply)
<b>TR private HIC modules</b>	
HIC-1GE-TX	1-port 10/100/1000M TX interface card
HIC-1GE-SFP	1-port 1000M SFP interface card
HIC-1GE-TX/SFP	1-port 100/1000M TX interface card
HIC-1E1B	1-port fractional E1 interface card
HIC-2E1B	2-port fractional E1 interface 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
HIC-2FXS	2-port FXS interface card
HIC-1BRI	1-port ISDN BRI interface card
DIC-8GE-TX	8-port 10/100/1000M TX L2 switching module
<b>TR 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-1CPOS-OC3/STM-1-SFP	1-port channelized 155M CPOS interface module (SFP)
HIM-1POS-OC3/STM-1-SFP	1-port unchannelized 155M POS interface module (SFP)