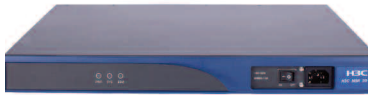


# H3C MSR 30 SERIES MULTI-SERVICE ROUTERS



H3C MSR 30-10 Router



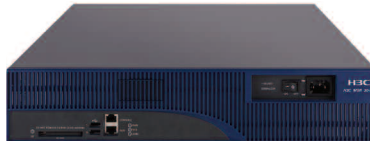
H3C MSR 30-11 Router



H3C MSR 30-16 Router



H3C MSR 30-20 Router



H3C MSR 30-40 Router



H3C MSR 30-60 Router

## OVERVIEW

The network is a critical component of a successful business, helping organizations expand into new markets, collaborate with customers, partners and employees and efficiently manage communications. It is imperative that the network enable these processes and communications reliably and cost effectively, while providing protection from potentially disruptive, expensive and reputation damaging security breaches.

With a modular design and support for innovative Open Application Architecture (OAA), H3C® MSR Series Multi-Service Routers deliver unmatched flexibility in satisfying customer business requirements, while reducing complexity, simplifying management and increasing control, providing lasting investment protection, and reducing capital and operating expenses.

H3C Multi-Service Routers enable an agile and flexible network infrastructure, with the ability to quickly adapt to changing business requirements, while delivering integrated, concurrent services on a single, easy-to-manage platform.

The MSR 30 Series consists of six modular chassis, available in Power over Ethernet (PoE) and non-PoE models—MSR 30-10, MSR 30-11, MSR 30-16, 30-20, 30-40 and 30-60—delivering:

- › embedded applications providing business productivity, enhanced security and performance accelerating applications and services;
- › unparalleled security and convergence support through the use of embedded and integrated hardware-based encryption and voice processing capabilities;
- › reliable, scalable, high-performance WAN and LAN connectivity in a single platform; and,
- › a comprehensive portfolio of interface and module options for LAN, WAN and voice communications.

## UNMATCHED FLEXIBILITY AND INVESTMENT PROTECTION WITH OPEN APPLICATION ARCHITECTURE

The MSR 30 enhances network functionality through delivering unmatched application and service flexibility based on business requirements. The result is increased investment protection, reduced complexity and costs, simplified deployment and management, and increased visibility and control.

## KEY BENEFITS

The modular design and high-performance engine of the MSR 30 Series, coupled with the flexibility of embedded applications, enables users to integrate individual or multiple business productivity, enhanced security and/or performance accelerating applications into the network. Additionally, users can deploy applications to meet their objectives today and easily update or change applications and services as the business evolves.

For service providers and systems integrators, the MSR platform and OAA enables innovative, differentiated services that provide higher value to customers and increase retention. For example, service providers can create and rapidly deploy fully-managed bundled services as well as customize their offering to fulfill a customer's unique business needs.

Examples of best-of-breed commercial, open source and H3C applications enabled through OAA include:

- › enhanced security functionality to fortify an organization's multi-layered security strategy;
- › network performance-enhancing WAN optimization and application acceleration that give branch office and remote employees faster and more reliable access to the tools and information needed to be successful; and,
- › monitoring and management applications to simplify network deployment and management as well as provide deep visibility in order to make informed business decisions.

## CONVERGED COMMUNICATIONS SUPPORT

In addition to a comprehensive portfolio of voice gateway interfaces, the MSR 30 Series delivers services up to wirespeed T1/E1 rates. The MSR 30 also offers optional embedded Voice Processing Modules (VPM) and Voice Co-Processing Modules (VCPM), which enable advanced voice processing for high-performance analog and digital voice services without compromising performance of the other modules or of the router.

The VCPM provides local Time Division Multiplexing (TDM) functions while the VPM serves as a Digital Signal Processor (DSP) to support IP voice communication over the network. Scalable voice configurations and higher line density are supported through the use of multiple VPMs, based on the number of voice lines required. VPMs and VCPMs reside on a centralized, embedded multi-service processor module, conserving router I/O slots for maximum port density and configuration flexibility. Fully-populated, the MSR 30 Series can accommodate as many as 300 digital voice channels.

Building on H3C's commitment to open standards, the MSR 30 Series supports common industry voice protocols including Session Initiation Protocol (SIP) and H.323.

## ADVANCED SECURITY AND CONTROL

To help protect sensitive information against unauthorized access, the MSR 30 Series integrates a number of comprehensive security services and access management capabilities, including:

- › Hardware-based Standard Network Data Encryption (SNDE) and Advanced Network Data Encryption (ANDE) embedded via Enhanced Services Modules (ESM) slots;
- › Encryption acceleration capabilities that ensure security without compromising network throughput as performance needs increase;
- › Progressive encryption methods such as DES and 3DES;
- › A comprehensive portfolio of security functionality delivered on the OAA module, including Information Leak Protection (ILP) and Security Information and Event Management (SIEM); and,
- › Additional security features such as advanced firewall, L2TP, MPLS and IPSec VPNs. SSHv2 and SNMPv3 protect router management sessions.

As with the voice modules, ESM modules reside on a centralized multi-service processing module, conserving router I/O slots for maximum configuration flexibility, port density and routing performance.

## INTEGRATED AND FLEXIBLE SERVICES ARCHITECTURE

The MSR 30 Series is modular in design and delivers integrated, concurrent services on a single platform, creating operational efficiencies, reducing costs and maximizing precious rack space and power. With a comprehensive set of integrated modules that deliver voice and data interfaces, and routing and switching capabilities, the MSR 30 has the capacity to deliver the functionality of multiple devices and appliances in a single platform.

The OAA applications are directly integrated into the router fabric to deliver deep monitoring capabilities and application functionality, with management via a single interface.

## HIGH DENSITY ROUTING AND SWITCHING PERFORMANCE

When evaluating multi-service routers, performance, port density and configuration flexibility are all key considerations. The MSR 30 Series outperforms competing multi-service routers, delivering packet

## KEY BENEFITS (CONTINUED)

forwarding performance up to 250 Kpps and encryption performance of up to 240 Mbps.

With a comprehensive portfolio of WAN and LAN interface modules, the MSR 30 delivers concurrent services up to T1/E1 rates, in addition to Fast Ethernet and Gigabit Ethernet LAN connectivity, and offers in-line PoE to provision IP phones, WLAN access points and IP security cameras as part of a unified branch office solution. In addition, Multi-function Interface Module (MIM) and Smart Interface Card (SIC) options include high-density Layer 2 10/100 Mbps Ethernet switching cards for integrated switching and routing in a single platform, simplifying infrastructure deployments for branch and regional offices.

### RESILIENCE AND REDUNDANCY FOR MAXIMUM UPTIME

The MSR 30 Series is designed for the highest levels of availability and resiliency to ensure continuous operation and to meet the requirements of real-time applications such as VoIP and live and on-demand video. Additional reliability capabilities include configuration rollback, Multilink PPP and Multilink Frame Relay and VRRP.

### NEXT-GENERATION ROUTING CAPABILITIES

The evolution to next generation networks based on IPv6 is imminent; however, organizations worldwide will follow different paths as they transition from today's IPv4 networks. The MSR 30 Series offers comprehensive IPv4 and IPv6 routing capabilities to accommodate a variety of migration approaches such as IPv4 "islands" on IPv6 networks, IPv6 "islands" on IPv4 networks and interconnection (with protocol translation) of IPv6 and IPv4 networks, enabling a wide array of network design possibilities.

Through a powerful suite of MPLS features, including MPLS TE (Traffic Engineering) and Fast Re-Route (FRR), the MSR 30 Series maximizes the benefit of a MPLS backbone to provide bandwidth optimization, strict QoS guarantees for the transport of critical traffic and the ability to quickly re-route traffic following network failures.

### FULLY FEATURED ROUTING PLATFORM

Unlike competitive offerings, the MSR 30 Series comes equipped with a complete routing and security suite, a robust application set and all required operating memory, eliminating the need for costly and inconvenient upgrades. Specifically, the MSR 30 Series includes:

- › Open, industry standards-based routing capabilities such as: IP and IPX routing; Open Shortest Path First (OSPF), RIP versions 1, 2 and 3; integrated intermediate system to intermediate system (IS-IS); multicast routing; QoS; IEEE 802.1Q VLANs; and IGMP versions 1, 2 and 3;
- › Built-in CompactFlash and USB slots that hold multiple configuration files and operating systems for recovery purposes; and,
- › A full complement of memory, including up to 1 GB of SDRAM and 256 MB of CompactFlash memory to support dual software images.

### SOPHISTICATED MANAGEMENT

Network infrastructure deployments and upgrades can be costly and time-consuming for organizations with several branch offices or remote locations. The MSR 30 Series offers an intuitive, easy-to-use CLI function that can be securely accessed locally or remotely for comprehensive configuration and management, with additional features that provide an extensive set of management capabilities.

For example, the MSR 30 Series is compatible with industry-standard NetFlow, an efficient and powerful technique for collecting IP traffic information, including information about network users and applications, peak usage times and traffic volumes. The MSR 30 Series is also fully manageable via H3C IMC (Intelligent Management Center), which provides unified, modular device, user and service management.

## Feature Summary

Advanced Multi-Service Architecture delivers enhanced, integrated data, voice and security services.

Embedded voice processing functionality delivers advanced, high-performance analog and digital voice capabilities for connections to centralized IP PBX and local public switched telephone network (PSTN).

Versatile modular chassis supports a full portfolio of WAN, LAN and voice interfaces. Backward compatibility with existing SIC and MIM interfaces enhances investment protection and provides maximum configuration flexibility.

Advanced, embedded security functions with multiple hardware encryption options ensure the highest levels of security without sacrificing throughput performance.

Standards-based design ensures complete interoperability in multi-vendor environments, including Cisco.

Enhanced performance, security and reliability make the MSR 30 Series the perfect platform for delivering converged networks, including data, voice, video and additional advanced applications through OAA.

Comprehensive IPv6 and IPv4 routing functionality ensures seamless migration.

## SERVICE AND SUPPORT

H3C Global Services offers the resources and talents of a major corporation plus more than two decades of experience in resolving network challenges and delivering business benefits to enterprises around the world.

Global support with a personalized, local focus in the local language helps drive productivity and minimize expenses. Because H3C understands both the technology and the business, we're the partner you need to remain strong and competitive.

### Suggested Service, Support and Training Offerings

H3C Guardian <sup>SM</sup> Maintenance Service	This service provides comprehensive on-site support and includes advance hardware replacement, expedited telephone technical support and software upgrades
H3C Express <sup>SM</sup> Maintenance Service	This service provides speedy access to H3C shipment of advance hardware replacements (including a four-hour option), expedited telephone technical support and software upgrades
Network Health Check	An activity-auditing service focused on improving network performance and productivity  Includes traffic monitoring, utilization analysis, problem identification, and asset deployment recommendations  Extensive report provides blueprint for action
Network Installation and Implementation Services	Experts set up and configure equipment and integrate technologies to maximize functionality and minimize business disruption  For large and complex sites, implementation services include personalized configuration, project management, extended testing and coaching on network administration
Project Management	Provides extra focus and resources that special projects demand  H3C engineers manage entire process from initial specifications to post-project review  Using structured methodology, requirements are identified, projects planned and progress of implementation activities tracked
Global Education and Training	Self-paced and instructor-led technology and product courses, plus certification programs

For additional information, please visit [www.h3cnetworks.com/services](http://www.h3cnetworks.com/services)

## PRODUCT WARRANTY

The H3C MSR 30 Series Multi-Service Routers have a 1-year hardware warranty that includes the power supply and fan assembly.

## SPECIFICATIONS

All information in this section is relevant to the MSR 30-10/11 30-16, 30-20, 30-40 and 30-60 unless stated otherwise.

MIM = Multi-function Interface Module

DMIM = Double-width Multi-function Interface Module

SIC = Smart Interface Controller

DSIC = Double-width Smart Interface Controller

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
Slot and Port Capacity	MIM slots: 1 XMIM SIC slots: 4 single-width or 2 single-width and 1 double-width or 2 double-width	MIM slots: 1 single-width MIM SIC slots: 4 single-width or 2 single-width and 1 double-width or 2 double-width	MIM slots: 2 single-width SIC slots: 4 single-width or 2 single-width and 1 double-width or 2 double-width	MIM slots: 4 single-width or 2 single-width and 1 double-width SIC slots: 4 single-width or 2 single-width and 1 double-width or 2 double-width	MIM slots: 6 single-width or 2 single-width and 2 double-width or 4 single-width and 1 double-width SIC slots: 4 single-width or 2 single-width and 1 double-width or 2 double-width
	3 Voice Processor Module (VPM) slots, for optional 8-, 16-, 24- or 32-channel processors (MSR 30-16 and 30-20 have 2 slots) 2 Enhanced Service Module (ESM) slots, for advanced or standard encryption accelerators 1 Voice Co-Processor Module (VCPM) slot 2 copper Gigabit Ethernet ports (MSR 30-16 has 2 10/100 Ethernet) 2 USB 1.1 ports (MSR 30-16 has 1 USB 1.1) 1 CompactFlash slot 1 console port 1 auxiliary port 1 redundant power supply input (not available on 30-16 non-PoE model) System Memory				
System Memory	4 Mb boot ROM 256 Mb (default) to 1 Gb DDR SDRAM 256 Mb CompactFlash				
Power Supply	100 to 240 VAC, 50/60 Hz 210W maximum				
Power over Ethernet: (PoE models only)	IEEE 802.3af PoE MSR 30-16 and 30-20: 8 switched ports supported MSR 30-40 and 30-60: 24 switched ports supported				
Physical Specifications	MSR 30-10: Height: 44.2 mm (1.7 in) Width: 360 mm (13.8 in) Depth: 441.8 mm (17.4 in) Weight: 4.8 kg (10.6 lb) MSR 30-11: Height: 44.2 mm (1.7 in) Width: 360 mm (13.8 in) Depth: 441.8 mm (17.4 in) Weight: 4.6 kg (10.1 lb)	Height: 44.2 mm (1.7 in) Width: 442 mm (17.4 in) Depth: 441.8 mm (17.4 in) Weight: PoE model– 6.6 kg (14.5 lb), non- PoE model– 6.0 kg (13.2 lb)	Height: 44.2 mm (1.7 in) Width: 442 mm (17.4 in) Depth: 441.8 mm (17.4 in) Weight: PoE model– 7.1 kg (15.6 lb), non- PoE model– 6.5 kg (14.3 lb)	Height: 88.2 mm (5.2 in) Width: 442 mm (17.4 in) Depth: 422.3 mm (16.6 in) Weight: PoE model– 8.6 kg (18.9 lb), non- PoE model– 8.0 kg (17.6 lb)	Height: 132 mm (5.2 in) Width: 442 mm (17.4 in) Depth: 421.8 mm (16.6 in) Weight: PoE model– 10.6 kg (23.3 lb), non- PoE model– 10.0 kg (22.0 lb)
Environmental	Operating temperature: 0° to 40° C (32° to 104° F) Storage temperature: -40° to 70° C (-40° to 158° F) Humidity (operating and storage): 5% to 90% non-condensing				
Regulatory Compliance	CE (European Union) UL (North America) FCC (North America)				

## SPECIFICATIONS (CONTINUED)

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
EMC Standards	FCC Part 15 (CFR 47) Class A ICES-003 Class A VCCI Class A CISPR 22 Class A EN 55022 Class A AS/NZS CISPR22 CLASS A EN 55024 CISPR 24 IEC 61000-3-2, 61000-3-3 EN 61000-6-1 ETSI EN 300 386 V1.3.3				
Safety Agency Certifications	UL 60950-1: 2003 CAN/CSA C22.2 No 60950-1-03 IEC 60950-1 2001 EN 60950-1/A11: 2004 AS/NZS 60950 EN 60825-1 and 60825-2 FDA 21 CFR Subchapter JTelecom Standards FCC Part 68 (CFR 47) IC CS-03				
MTBF	MSR 30-16 PoE: 34 years (302,000 hours) MSR 30-16 non-PoE: 40 years (354,000 hours) MSR 30-20 PoE: 32 years (283,000 hours) MSR 30-20 non-PoE: 38 years (335,000 hours) MSR 30-40 PoE: 32 years (282,000 hours) MSR 30-40 non-PoE: 36 years (322,000 hours) MSR 30-60 PoE: 32 years (281,000 hours) MSR 30-60 non-PoE: 36 years (319,000 hours) Processors: PowerPC 533 MHz				
<b>Processors</b>					
Router Chassis	PowerPC 533 MHz				
Voice Processing Module	8, 16, 24, or 32 voice channels				
Enhanced Service Module	Standard or advanced encryption Open Applications Architecture (OAA) Modules				

## SPECIFICATIONS (CONTINUED)

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
<b>Network Management</b>					
Tools	CLI H3C IMC (Intelligent Management Center)				
Embedded Management Features	SNMP v1, v2c, v3 Standard and enterprise MIBs Telnet SSH Syslog BIMS RMON Zero-touch deployment Configuration rollback NetStream packet statistics				
LAN Interface Modules (SIC/DSIC)	1-port 10/100 Ethernet 1-port 10/100/1000 Ethernet 4- and 9-port 10/100 Ethernet switching 4- and 9-port 10/100 PoE Ethernet switching				
LAN Interface Modules (MIM/DMIM)	2-, 16- and 24-port 10/100 Ethernet 1-port 10/100/1000 Ethernet 1-port Gigabit Ethernet fiber 16- and 24-port 10/100 PoE switching				
WAN Interface Modules (SIC/DSIC)	1-port enhanced serial sync/async 1-port ISDN-S/T 1-port ISDN-U 1-port Fractional E1 1-port Fractional T1 1-port ADSL 2+ 1-port analog modem				
WAN Interface Modules (MIM)	1-port G.SHDSL 2- and 4-port enhanced serial sync/async 2- and 4-port E1/CE1/PRI 2-port FT1/CT1/PRI 4-port E1 IMA 4-port T1 IMA 4-port enhanced ISDN-S/T 1-port FE3/CE3 1-port FT3/CT3				
Voice Modules (SIC)	1- and 2-port voice FXS 1- and 2-port voice FXO 1-port E1 voice 1-port T1 voice				
Voice Modules (MIM)	2- and 4-port voice FXS 2- and 4-port voice FXO 1- and 2-port E1 voice 1- and 2-port T1 voice 2- and 4-port E&M				

## SPECIFICATIONS (CONTINUED)

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
<b>Voice Support</b>					
Interface	FXS FXO E&M E1VI/T1VI				
Signaling	SIP R2 DSSI Q.sig Digital E&M				
H.323	H.225 H.245				
CODECs	G.711A law G.711U law G.723R53 G.723R63 G.729a G.729R8				
Media Process	RTP/cRTP IPHC Voice backup				
FAX	Fax				
Other	Voice RADIUS Voice over Frame Relay (VoFR)				
<b>Link Protocols</b>					
LAN Protocols	Ethernet II Ethernet SNAP IEEE 802.3x VLAN IEEE 802.1P IEEE 802.1Q IEEE 802.1Q IEEE 802.3ad LACP IEEE 802.1w RSTP IEEE 802.1s MSTP IGMP snooping GVRP Port loopback Port multicast suppression				
WAN Protocols	PPP and Multilink PPP (MP) PPPoE client and server PPP/MP over FR FR and Multilink FR (MFR) Frame relay fragmentation, compression, and FR over IP Frame Relay Traffic Shaping (FRTS) ATM (IPoA, IPoEoA, PPPoA and PPPoEoA) DCC and dialer watch HDLC LAPB X25, X25 over TCP, X25 to TCP X25 PAD, X25 hunt groups and X25 CUG DLSW (V1.0/2.0) ISDN and ISDN network ISDN QSIG MODEM				



## SPECIFICATIONS (CONTINUED)

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
<b>Network Protocols</b>					
IP Service and Applications	TCP UDP ARP IP option IP unnumbered Policy-based routing (unicast/multicast) PING, traceroute DHCP server, relay, and client DNS client DNS static NQA IP accounting UDP helper NTP Telnet TFTP client FTP server, client				
IP Routing	Static RIP v1 and v2 OSPF OSPF v3 BGP IV IS-IS IGMP PIM-DM PIM-SM MBGP MSDP				
Non-IP	SNA/DLSw IPX SOT NetStream				

## SPECIFICATIONS (CONTINUED)

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
<b>Quality of Service (QoS)</b>					
Layer 2 QoS	SP WRED (Port) CAR LR Flow-based QoS policy Port-based mirroring Flow-based mirroring CoS-based Head of Line Blocking (HOLB) prevention Packet remarking Flow redirect Flow accounting Priority mapping Port trust mode Port priority Flow filter Flow control and backpressure ACL				
Traffic Policing	Committed Access Rate (CAR) Line Rate (LR)				
Congestion Management	FIFO PQ CQ WFQ CBQ RTPQ				
Congestion Avoidance	WRED/RED				
Traffic Shaping	Generic				
Other	FR QoS MPLS QoS MP QoS/LFI cRTP/IPHC ATM QoS Sub-interface QoS				

## SPECIFICATIONS (CONTINUED)

Features	MSR 30-10/11	MSR 30-16	MSR 30-20	MSR 30-40	MSR 30-60
<b>Network Security and Reliability</b>					
Port-Based	PPPoE client and server Portal IEEE 802.1X				
AAA	Local authentication RADIUS TACACS				
Firewall	ASPF Access Control Lists (ACL) Filtering				
Data Security	IKE IPSec Encryption accelerator Portal				
Other	L2TP NAT/NAPT PKI RSA SSH v1.5 and v2 SSL URPF GRE				
Reliability	VRRP Backup Center				

## ORDERING INFORMATION

### MSR 30 Series Router Hosts

SKU No.	Description
0235A39H	H3C MSR 30-10 Router Host(AC), 2FE, 2SIC, 1XMIM, 256DDR
0235A29L	H3C MSR 30-11 Router Host (AC), 2FE, 1SA, 2SIC, 1XMIM, 256DDR, Comware V5 Standardf
0235A237	H3C MSR 30-16 Router Host (AC), 2FE, 1MIM, 4SIC, 256F/256D
0235A19L	H3C MSR 30-20 Router Host (AC), 2GE, 2MIM, 4SIC, 256F/256D
0235A20J	H3C MSR 30-40 Router Host (AC), 2GE (Combo), 4MIM, 4SIC, 256F/256D
0235A20K	H3C MSR 30-40 Router Host (AC), 2GE (Combo), 4MIM, 4SIC, 256F/256D
0235A267	H3C MSR 30-20 Router Host (DC)
0235A268	H3C MSR 30-40 Router Host (DC)
0235A269	H3C MSR 30-60 Router Host (DC)
0235A238	H3C MSR 30-16 Router Host (PoE)
0235A239	H3C MSR 30-20 Router Host (PoE)
0235A25R	H3C MSR 30-40 Router Host (PoE)
0235A25S	H3C MSR 30-60 Router Host (PoE)

### Software License

SKU No.	Description
3130A15C	H3C MSR 30 Series Router Software License* *Software is bundled with the MSR 30-10 and 30-11 and is not required to be ordered separately

### Encryption Sub-cards

SKU No.	Description
0231A64Q	Advanced Network Data Encryption ESM Module
0231A64R	Standard Network Data Encryption ESM Module

### Voice Processing Modules

SKU No.	Description
0231A64S	Voice Co-processing Module
0231A63L	32-Channel Voice Processing Module
0231A63M	24-Channel Voice Processing Module
0231A63N	16-Channel Voice Processing Module
0231A63P	8-Channel Voice Processing Module

## ORDERING INFORMATION (CONTINUED)

### Smart Interface Card (SIC) -FE/GE/FSW/POE for MSR 20/30/50

SKU No.	Description
0231A53T	1-Port 10/100M Ethernet Electrical Interface Board(RJ45)
0231A81M	1-Port 100M SFP Interface SIC Module
0231A61M	1-Port 10M/100M/1000M Combo Ethernet Interface SIC Module
0231A61N	4-Port 10M/100M Ethernet L2 Switch Module(RJ45)
0231A61P	9-Port 10M/100M Ethernet L2 Switch Module(RJ45)

### SIC -E1/T1/CE1/CT1 for MSR 20/30/50

SKU No.	Description
0231A53V	1-Port E1/CE1/PRI Interface Card
0231A90R	1-Port E1 Interface Card-Fractional
0231A52S	1-Port T1 & Fractional T1 Interface Module

### SIC -Voice for MSR 20/30/50

SKU No.	Description
0231A706	1-Port ISDN-S/T Voice Interface SIC Module
0231A707	2-Port ISDN-S/T Voice Interface SIC Module
0231A56Q	1-Port Analog Trunk Interface Card,FXO
0231A56P	2-Port Analog Trunk Interface Card,FXO
0231A56S	1-Port Analog Line Interface Card,FXS
0231A56R	2-Port Analog Line Interface Card,FXS
0231A86Y	2FXS+1FXO Voice Interface SIC Module
0231A61Q	1-Port E1 Voice SIC Interface Module
0231A61R	1-Port T1 Voice SIC Interface Module

### SIC -Others for MSR 20/30/50

SKU No.	Description
0231A50Y	1-Port ADSL over POTS Interface Module
0231A49M	1-Port Analog Modem Interface Module
0231A49N	2-Port Analog Modem Interface Module
0231A61A	1-Port ISDN-U Interface SIC Module
0231A56N	1-Port Enhanced Sync/Async Interface Card
0231A835	8-Port Asynchronous Serial Interface SIC Module
0404A095	SIC-8AS Cable
0231A94A	802.11b/g/n Wireless Access Point SIC Module
0231A949	WCDMA 3G Wireless WAN Interface SIC Module

## ORDERING INFORMATION (CONTINUED)

### MIM Modules

SKU No.	Product Name	Description
0231A60T	RT-MIM-1VE1-H3	1-Port E1 Voice MIM Interface Module
0231A60U	RT-MIM-1VT1-H3	1-Port T1 Voice MIM Interface Module
0231A60V	RT-MIM-2VE1-H3	2-Port E1 Voice MIM Interface Module
0231A60W	RT-MIM-2VT1-H3	2-Port T1 Voice MIM Interface Module
0231A60X	RT-MIM-16FSW-H3	16-Port 10M/100M Ethernet L2 Switch MIM Interface Module
0231A60S	RT-DMIM-24FSW-H3	24-Port 10M/100M and 2-Port 1000BASE-T/1000BASE-X(COMBO) Ethernet L2 Switch MIM Interface Module
0231A75R	RT-MIM-16FSW-POE-H3	16-Port 10M/100M(With PoE) Ethernet L2 Switch MIM Interface Module
0231A75S	RT-DMIM-24FSW-POE-H3	24-Port 10M/100M(With PoE) and 2-Port 1000BASE-T/1000BASE-X(COMBO) Ethernet L2 Switch MIM Interface Module
0231A811	RT-XMIM-16FSW-H3	16-Port 10M/100M Ethernet L2 Switch XMIM Interface Module
0231A77B	RT-XMIM-24FSW-H3	24-Port 10M/100M Ethernet L2 Switch XMIM Interface Module
0231A719	RT-MIM-1FE-V2-H3	1-Port 10M/100M Ethernet Electrical Interface MIM Module(RJ45)
0231A71A	RT-MIM-2FE-V2-H3	2-Port 10M/100M Ethernet Electrical Interface MIM Module(RJ45)
0231A54X	NS-MIM-4FE-H3	4-port 10/100BASE-TX Module(RJ45)
0231A55V	RT-MIM-1POS-H3	1-Port Packet over SDH/SONET Interface Module
0231A55W	RT-MIM-1CPOS(E)-H3	1-Port Channelized POS 155M to E1 Interface Module (SFP)
0231A55R	RT-MIM-1GBE-H3	1-Port 10/100/1000BASE-T Ethernet Electrical Interface Module,RJ45
0231A54M	RT-MIM-2GBE-H3	2-Port 10/100/1000BASE-T Ethernet Electrical Interface Module, RJ45
0231A55U	RT-MIM-1GEF-H3	1-Port 1000BASE-X Optical Interface Module (SFP, LC)
0231A54C	RT-MIM-2GEF-H3	2-Port 1000BASE-X Optical Interface Module (SFP, LC)
0231A53H	RT-MIM-8ASE-H3	8-Port Asynchronous Serial Interface Module,RJ45
0231A55Q	RT-MIM-16ASE-H3	16-Port Asynchronous Serial Interface Module,RJ45
0231A53D	RT-MIM-2SAE-H3	2-Port Enhanced Sync/Async Interface Module
0231A53E	RT-MIM-4SAE-H3	4-Port Enhanced Sync/Async Interface Module
0231A55E	RT-MIM-8SAE-H3	8-Port Enhanced Sync/Async Interface Module
0231A53R	RT-MIM-1E1-V2-H3	1-Port CE1/PRI Interface Module
0231A53S	RT-MIM-1E1-F-V2-H3	1-Port E1 & Fractional E1 Interface Module
0231A53P	RT-MIM-2E1-V2-H3	2-Port CE1/PRI Interface Module
0231A53Q	RT-MIM-2E1-F-V2-H3	2-Port E1 & Fractional E1 Interface Module
0231A54R	RT-MIM-4E1-V2-H3	4-Port CE1/PRI Interface Module
0231A54S	RT-MIM-4E1-F-V2-H3	4-Port E1 & Fractional E1 Interface Module
0231A56W	RT-MIM-8E1(75)-H3	8-port E1/CE1/PRI Module (75ohm)
0231A54L	RT-MIM-8E1(75)-F-H3	8-Port E1 Module-Fractional (75ohm)

## ORDERING INFORMATION (CONTINUED)

### MIM Modules (continued)

SKU No.	Product Name	Description
0231A54Q	RT-MIM-2T1-F-V2-H3	2-Port T1 & Fractional T1 Interface Module
0231A54F	RT-MIM-4T1-F-V2-H3	4-Port T1 & Fractional T1 Interface Module
0231A86R	RT-MIM-1CE3-V2-H3	1-Port Fractional CE1 Interface FIC Module
0231A867	RT-MIM-1CT3-V2-H3	1-Port Fractional CT1 Interface FIC Module
0231A54D	RT-MIM-1SHL-4W-H3	1-Port Four Wire G.SHDSL Interface Module
0231A55M	RT-MIM-1G.SHDSL-H3	1-Port G.SHDSL Interface Module,RJ11
0231A790	RT-MIM-1ATM-OC3-H3	1-Port OC-3 ATM Module
0231A56C	RT-MIM-IMA-4E1(75)-H3	4-Port E1 ATM IMA Interface Module (75ohm)
0231A56A	RT-MIM-IMA-8E1(75)-H3	8-Port E1 ATM IMA Interface Module(75ohm)
0231A55Y	RT-MIM-HNDE-H3	High Performance Network Data Encryption Module
0231A55T	RT-MIM-2FXS-V2-H3	2-Port Analog Line Interface Module,FXS-V2
0231A55S	RT-MIM-4FXS-V2-H3	4-Port Analog Line Interface Module,FXS-V2
0231A53G	RT-MIM-2FXO-V2-H3	2-Port Analog Trunk Interface Module,FXO-V2
0231A53F	RT-MIM-4FXO-V2-H3	4-Port Analog Trunk Interface Module, FXO-V2
0231A52V	RT-MIM-4EM-H3	4-Port Analog Trunk Interface Module,E&M
0231A50R	RT-MIM-4BSV-H3	4-Port ISDN BRI S/T-interface Voice Module
0231A884	RT-MIM-16FXS-H3	16-Port FXS Voice Interface MIM Module

### IP Telephony

SKU No.	Description
0231A0D2	VCX Connect Primary MIM
0231A0D3	VCX Connect Secondary MIM
0231A0D4	VCX Enterprise Branch MIM

### Cable - SAE

SKU No.	Description
04043589	V.24 Serial Port Cable, DTE, 3m
04043590	V.24 Serial Port Cable, DCE, 3m
04043591	V.35 Serial Port Cable, DTE, 3m
04043592	V.35 Serial Port Cable, DCE, 3m
04043593	X.21 Serial Port Cable, DTE, 3m
04043594	X.21 Serial Port Cable, DCE, 3m
04043595	RS449 Serial Port Cable, DTE, 3m
04043596	RS449 Serial Port Cable, DCE, 3m
04043597	RS530 Serial Port Cable, DTE, 3m
04043770	RS530 Serial Port Cable, DCE, 3m

## ORDERING INFORMATION (CONTINUED)

### Cable - E1/T1

SKU No.	Description
04026104	E1 Cable 3m-DB15 Male/RJ45 (120 ohm)
04040150	E1 Cable 20m-DB15 Male/RJ45 (120 ohm)
04040151	E1 Cable 40m-DB15 Male/RJ45 (120 ohm)
04026106	E1 Cable 3m-DB15 Male/2*BNC (75 ohm)
04040148	E1 Cable 20m-DB15 Male/2*BNC (75 ohm)
14040202	Coaxial Connector, BNC, 75ohm, Dual Female
04026813	Refiner Converter Cable (With BNC Connector Jack)
04042020	T1V1 Cable with DB15 Male/RJ45-3m
14080099	Connector for T1V1 and E1 RJ45 Interface
04041054	T1 Cable RJ45/RJ45-3m

### Cable - Others

SKU No.	Description
04021299	Aux Cable-3m (D25 Male)
0404A048	Single Cable, Transit Cable, 0.5m (RJ45)
0404A01K	Single Cable, Transit Plug, D25F, MP8(S)-III

### SFP Modules

SKU No.	Description
0231A320	100BASE-FX SFP Transceiver, Multi-Mode (1310nm, 2km, LC)
0231A564	100BASE-LX SFP Transceiver, Single Mode (1310nm, 15km, LC)
0231A089	100BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC)
0231A090	100BASE-LH80 SFP Transceiver, Single Mode (1550nm, 80km, LC)
0231A562	1000BASE-SX SFP Transceiver, Multi-Mode (850nm, 550m, LC)
0231A563	1000BASE-LX SFP Transceiver, Single Mode (1310nm, 10km, LC)
02312170	1000BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC)
02312172	1000BASE-LH40 SFP Transceiver, Single Mode (1550nm, 40km, LC)
02312173	1000BASE-LH70 SFP Transceiver, Single Mode (1550nm, 70km, LC)

### Memory Options

SKU No.	Description
0620A014	128MB SDRAM SODIMM
0620A001	256M SDRAM SODIMM

### CF Options

SKU No.	Description
0601A004	Industrial Compact Flash Card 256MB
0601A003	Compact Flash 512MB
0601A001	Compact Flash 1G

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