H3C MSR Router Hardware Reference Manual - Official Technical Overview & Hardware Datasheet

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OFFICIAL TECHNICAL OVERVIEW & HARDWARE DATASHEET

EXECUTIVE SUMMARY

The H3C MSR (Multiple Service Router) Series represents a paradigm shift in enterprise and carrier-grade network infrastructure, delivering a converged platform that integrates routing, switching, security, voice, and wireless services into a single, high-performance chassis. This document provides a comprehensive technical reference for the hardware architecture of the H3C MSR Router Series, covering chassis design, modular expansion capabilities, interface specifications, and performance metrics. Designed to meet the rigorous demands of modern network environments, the MSR Series offers unparalleled flexibility, allowing network architects to tailor configurations for applications ranging from small branch offices to large-scale enterprise core networks.

Built upon H3C's proven Comware V7 operating system, the MSR platform incorporates advanced hardware acceleration engines and a non-blocking switching fabric, ensuring line-rate performance for concurrent services. The

router's modular architecture supports a wide variety of interface modules, including Smart Interface Cards (SICs), Double-Sized Smart Interface Cards (DSICs), and Enhanced Service Modules (ESMs), facilitating seamless network evolution and investment protection .

ARCHITECTURE & CHASSIS DESIGN

The H3C MSR Series is architected around a high-availability, modular chassis that supports a diverse range of form factors to suit various deployment scenarios. From compact, fan-less desktop models suitable for small office/home office (SOHO) environments to high-density rack-mountable systems for data centers, the MSR product family scales to meet the demands of any network .

Key Chassis Models and Specifications

MSR 20-1X Series: These multifunctional access routers are oriented towards small and medium businesses (SMBs), enterprise branches, and home offices. They offer a cost-effective solution with fixed Layer 2/3 Ethernet interfaces and one SIC/DSIC slot for expansion. Models such as the MSR 20-10, 20-11, 20-12, 20-13, and 20-15 provide varying fixed-interface options, including ADSL, G.SHDSL.BIS, SA, and E1/T1, making them highly versatile .

MSR 20-2X Series: Designed as core routers for small to medium enterprise networks or as access routers for large enterprise branches, these routers feature a modular design with up to four SIC slots, ensuring high flexibility. They are suitable for carrier-level networks such as telecom management and billing networks. Powered by a PowerPC processor, they offer robust performance for demanding applications .

MSR 30/50 Series: Positioned for larger enterprise deployments and carrier-grade applications, these routers provide higher processing power and increased slot density for a greater number of SICs, DSICs, and ESMs. They support comprehensive redundancy features, including 1+1 power supply configurations, ensuring maximum uptime for mission-critical services .

HARDWARE FEATURES & CAPABILITIES

1. Modular Expansion Architecture: The cornerstone of the MSR Series is its modular design, which enables businesses to invest in a flexible platform that can grow with their needs. The routers support a comprehensive portfolio of interface modules, including:

- SIC (Smart Interface Card): Single-width modules for basic connectivity, such as Ethernet, serial (SA), and ISDN BRI .
- DSIC (Double-Sized Smart Interface Card): Larger modules that provide advanced functionality or higher port density .
- ESM (Enhanced Service Module): Specialized modules that offload services such as encryption, voice processing, and application acceleration, freeing up the main CPU for routing tasks .
- VPM (Voice Processing Module): Modules that provide voice and fax services, transforming the router into a converged voice and data gateway .

2. High-Performance Processing: The routers are driven by high-performance PowerPC processors, ensuring rapid packet forwarding and efficient processing of complex services. The integration of a dedicated hardware switching engine ensures that data traffic is forwarded at wire speed, minimizing latency .

3. Comprehensive Fixed Interfaces: Depending on the model, the MSR routers provide a rich set of built-in interfaces, including:

- Console Port: For local configuration and management.
- AUX Port: For remote backup and management.
- USB Ports: For flexible file transfer, system upgrades, and booting.
- Fast Ethernet (FE) and Layer 2/3 Gigabit Ethernet Ports: For flexible WAN and LAN connectivity .

4. Security and VPN: The platform integrates robust security features, including stateful firewall, IPsec VPN, and SSH . The hardware architecture includes a dedicated encryption engine on specific modules to offload cryptographic operations, enabling high-performance, line-rate VPN services.

5. Environmental Versatility: The MSR Series is designed to operate reliably across a wide range of environmental conditions. The MSR 900W model, for instance, operates within a temperature range of 0°C to 40°C and a relative humidity range of 5% to 90% (non-condensing), ensuring stability even in unoptimized spaces . Ruggedized variants may be available for more extreme field deployments.

COMPLIANCE & STANDARDS

The H3C MSR Router Series adheres to a comprehensive set of international standards and industry protocols, ensuring seamless interoperability in multivendor networks. The routers support network management via SNMP V1/V2c/V3, MIBs, SYSLOG, and RMON, allowing for easy integration into existing network management systems .

The platform is fully compliant with IEEE 802.11b/g standards for wireless connectivity and supports various security protocols including WEP, TKIP, CCMP, WPA, and RSN . The hardware documentation set is organized to facilitate installation, configuration, and troubleshooting, providing a clear path from deployment to operations .

TECHNICAL SPECIFICATIONS

The following table provides a detailed summary of the hardware specifications for key representative models within the MSR Series. Please refer to the specific orderable SKU for exact configurations.

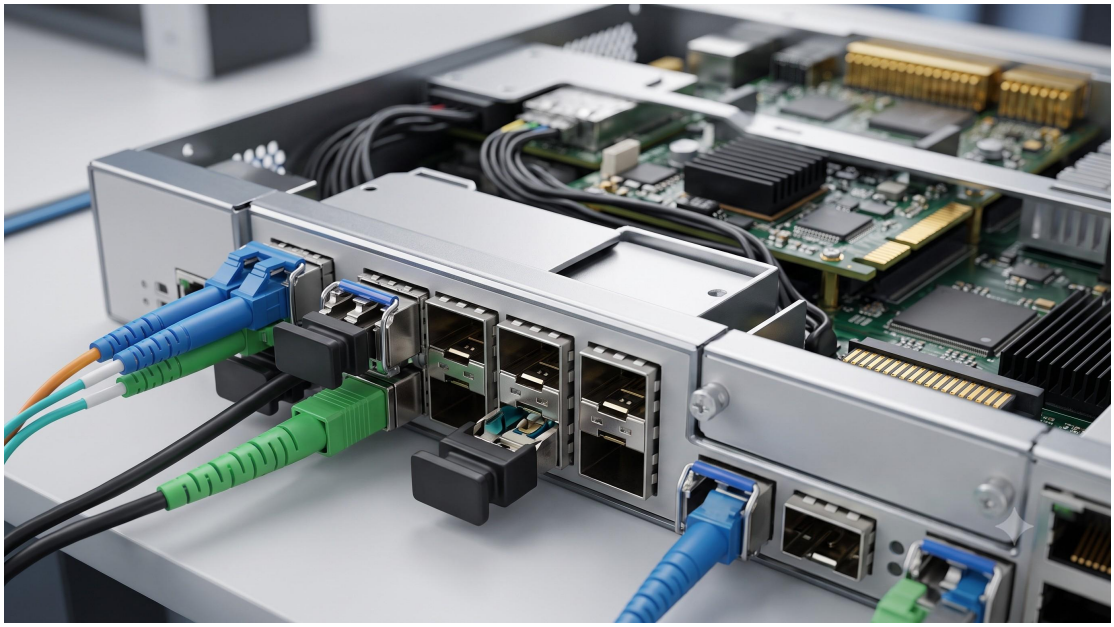
Parameter	**MSR 20-20 / 20-21**	**MSR 20-40**	**MSR 900W**
Form Factor	Desktop / 1RU	Desktop / 1RU	Desktop

	(Rack-mountable)	(Rack-mountable)	
Processor	PowerPC	PowerPC	MPC 266 MHz
Fixed WAN/LAN Ports	2x FE (Layer 3)	2x FE (Layer 3)	1x WAN (10/100Mbps), 4x LAN (10/100Mbps)
Expansion Slots	2x SIC	4x SIC (compatible with 2 DSICs)	Non-modular
Memory (DRAM/Flash)	N/A	N/A	256 MB DDR2 / 256 MB
Power Supply	AC-Powered	AC-Powered	AC 100-240V, 50/60Hz, 12W
Dimensions (WxDxH)	N/A	N/A	230 x 160 x 43.6 mm

ORDERING OPTIONS AND SKU GUIDE

The H3C MSR Series offers a wide variety of chassis, power supplies, interface modules (SICs, DSICs, ESMs), and software licenses. When specifying hardware, ensure compatibility between the chassis slot types (SIC, DSIC) and the chosen

modules. Modular power supplies (AC and DC options) are available for select models to support 1+1 redundancy . Field-upgradable memory and storage options are also available for specific models to adapt to evolving network requirements. For a complete list of orderable SKUs and compatibility matrices, please consult the official H3C product list or contact your authorized H3C sales representative.



LIFECYCLE ASSURANCE (MTBF)

The H3C MSR platform is engineered for longevity and reliability. Designed with industrial-grade components, the hardware boasts a high Mean Time Between Failures (MTBF), supported by rigorous quality assurance processes. The modular design facilitates simplified maintenance and repairs, minimizing operational disruptions and ensuring a lower Total Cost of Ownership (TCO).

H3C's global support infrastructure, including 24-hour hotline services at 400-810-0504 and extensive online resources at http://www.h3c.com, provides comprehensive lifecycle support .