H3C S5560X-EI Series Gigabit Switch IRF - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The H3C S5560X-EI Series represents a family of high-performance, converged gigabit Ethernet switches designed for enterprise access, aggregation, and small-to-medium core deployments. At the heart of its resiliency and operational simplicity lies the Intelligent Resilient Framework (IRF2), H3C's proprietary software virtualization technology. IRF2 enables multiple physical S5560X-EI switches to be interconnected and virtualized into a single logical device, delivering 1:N master-slave redundancy, cross-device link aggregation, and unified management. This document provides a comprehensive technical overview of the hardware platform and the specific architectural advantages IRF2 brings to network infrastructure.



ARCHITECTURE & CHASSIS DESIGN

The S5560X-EI series is built upon H3C's advanced Comware V7 software platform and a high-performance hardware architecture. The physical chassis is designed for flexibility and redundancy. Key hardware models within the series feature dual power supply slots and dual fan tray slots, enabling 1+1 power redundancy and reliable thermal management. The series includes models with 24 or 48 fixed 10/100/1000BASE-T ports or SFP ports, alongside fixed 10GE SFP+ uplinks. A dedicated expansion slot allows for the addition of high-density interface cards, including 40GE QSFP+ or 25GE SFP28 modules, providing scalability for future bandwidth demands. This modular design ensures that the platform can adapt to evolving network requirements while maintaining a compact 1RU form factor.

HARDWARE FEATURES

The hardware platform is optimized for high availability and service continuity. The front panel provides console access via both Micro USB and standard serial ports, alongside a dedicated management Ethernet port for out-of-band management. The inclusion of fixed 10GE SFP+ ports on all models ensures high-speed uplink connectivity without the need for additional modules, facilitating 1:1 non-blocking network designs. For environments requiring Power over Ethernet (PoE), specific models (e.g., S5560X-30C-PWR-EI, S5560X-54C-PWR-EI) deliver PoE+ power to connected devices, supporting critical access layer functions such as IP telephony and wireless access points. The hardware is engineered for operational resilience, supporting a wide operating temperature range and high MTBF ratings to ensure long-term reliability in diverse deployment scenarios.

COMPLIANCE & STANDARDS

The S5560X-EI series adheres to stringent international safety and electromagnetic compatibility standards. The platform is compliant with UL 62368-1, EN 62368-1, and IEC 62368-1 for safety, as well as relevant EMC directives for emissions and immunity. The IRF2 implementation leverages standard Ethernet interfaces (10GE or 40GE) for stacking, ensuring compatibility

with standard cabling and transceiver infrastructure. The software platform supports a wide array of industry-standard protocols, including IEEE 802.1Q VLANs, 802.3ad link aggregation, and various routing protocols (OSPF, BGP, IS-IS), ensuring seamless integration into multivendor environments.

TECHNICAL SPECIFICATIONS

The following table summarizes the core hardware parameters for representative models within the S5560X-EI Series. Specifications vary by specific model and installed components.

Parameter	**Specification**
Form Factor	1RU Chassis
Fixed Ports (Example: S5560X-30C-EI)	24 x 10/100/1000BASE-T, 4 x 10GE SFP+
Fixed Ports (Example: S5560X-54C-EI)	48 x 10/100/1000BASE-T, 4 x 10GE SFP+
Expansion Slot	1 x Interface Module Slot (Supports 40GE QSFP+, 25GE SFP28, etc.)
Power Supply	Dual Power Module Slots (1+1 Redundancy, AC/DC options)
Fan Tray	Dual Fan Tray Slots (1+1 Redundancy)

Switching Capacity	Varies by model (e.g., up to 598 Gbps for high-end models)
IRF Stacking Bandwidth	Up to 160 Gbps
Operating Temperature	-5°C to 45°C (23°F to 113°F)
Management Ports	1 x Console (Micro USB/Serial), 1 x Management Ethernet

IRF2 DEPLOYMENT AND OPERATIONAL ADVANTAGES

The Intelligent Resilient Framework (IRF2) transforms the physical topology into a simplified logical architecture. When multiple S5560X-EI switches are connected via IRF physical ports (typically 10GE or 40GE interfaces) and configured, they operate as a single device. This architecture delivers significant operational benefits. Management is simplified as administrators log into a single master switch to configure all member devices. Redundancy is inherent; if the master switch fails, a new master is elected from the remaining members automatically, ensuring continuous service availability. Furthermore, IRF2 supports cross-device link aggregation, allowing links from multiple physical switches to be bundled into a single logical trunk, eliminating Spanning Tree Protocol (STP) blocking and maximizing bandwidth utilization. To ensure fabric integrity, Multi-Active Detection (MAD) mechanisms, such as LACP MAD or BFD

MAD, are employed to detect and mitigate split-brain scenarios, safeguarding network stability.

