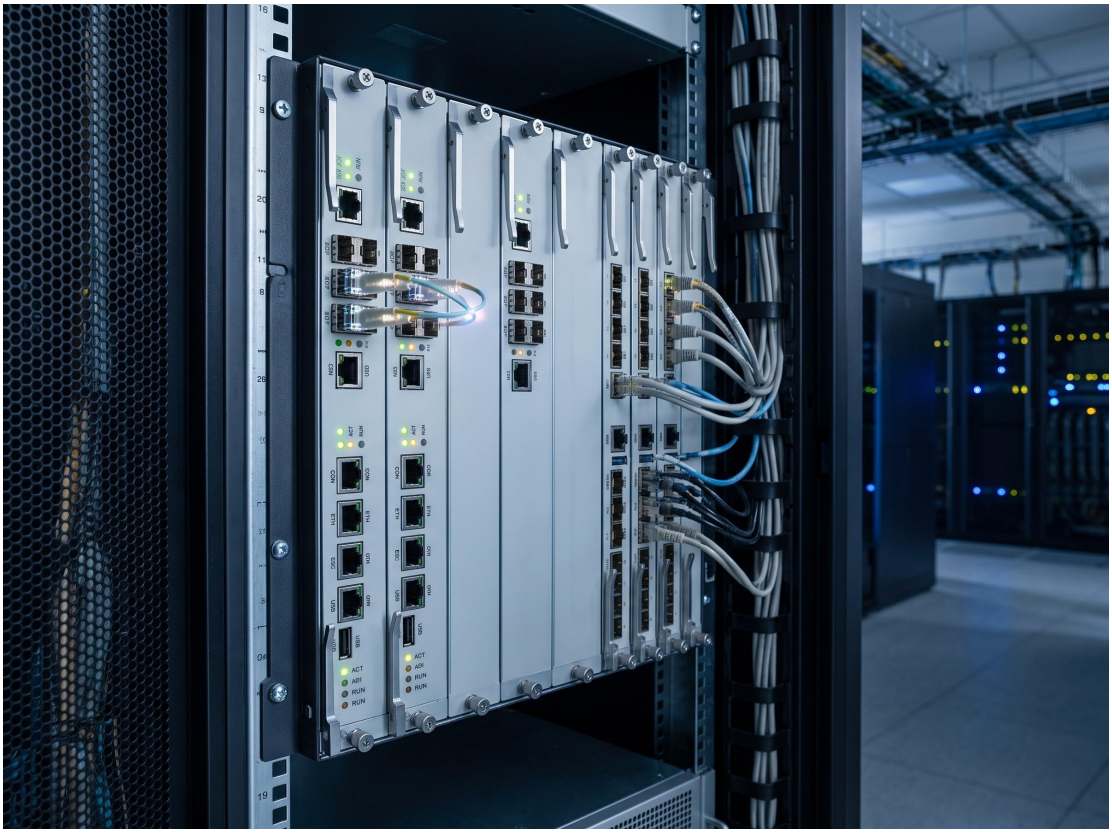
Huawei H901MPLB Main Control Board - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Huawei H901MPLB represents the apex of control plane engineering within the SmartAX MA5800 series, purpose-built for the gigabit ultra-broadband era. As the central nervous system of the MA5800-X7, X15, and X17 chassis, the H901MPLB integrates system control, service switching, and aggregation into a single, cohesive processing engine . Unlike conventional architectures where processing resources are bottlenecked at a central point, the H901MPLB operates in concert with the MA5800's distributed architecture, enabling a forwarding capacity that scales linearly with service board deployment. This document provides an authoritative technical deep-dive into the H901MPLB, detailing its dual-active processing capacity, silicon-level architecture, and operational parameters for carrier-grade deployment.



HARDWARE ARCHITECTURE & SILICON

The H901MPLB is a super control unit board engineered to function as the management and control core of the integrated network management system (NMS) . At its architectural foundation lies a high-capacity switching fabric designed for non-blocking, line-rate forwarding. The board establishes communication with service boards through a combination of master/slave serial ports and inband GE/10GE channels, allowing it to configure, manage, and control the entire chassis while simultaneously executing simple route protocol functions .

The physical form factor of the H901MPLB is a compact 31.0 mm (W) x 258.9 mm (D) x 399.1 mm (H) module with a net weight of 2.2 kg, designed for dedicated control slots within the MA5800 chassis . Front panel connectivity includes four SFP+/SFP cages for 10GE/GE optical uplink or cascading ports, alongside management interfaces for CON (RJ-45), ETH (RJ-45), and ESC (RJ-45) . The board supports hot-swappable operation and is equipped with dual-active processing capability, wherein two H901MPLB boards can operate in a load-sharing configuration to effectively double the system's processing throughput .

KEY FEATURES & ROUTING LOGIC

- Dual-Active Load Sharing: When two H901MPLB boards are installed, they operate concurrently in load sharing mode, delivering 200 Gbit/s of bandwidth per service slot and a total system switching capacity of 7 Tbit/s . This architecture eliminates the standby board idle-time penalty characteristic of traditional 1+1 redundancy schemes.

- Comprehensive Subscriber Management: The H901MPLB supports access for up to 17,408 ONTs and 17,408 multicast users, with a configurable multicast channel capacity of 4,096 and concurrent multicast channel support of 4,000 . The MAC address table holds 262,143 entries.

- Layer 3 Routing Capabilities: The board implements IPv4 and IPv6 routing with table sizes of 65,536 and 16,384 entries respectively . The ARP table is scalable up to 131,072 entries depending on software version (V100R018C00 and later), ensuring sufficient capacity for high-density subscriber environments .

- Precision Timing and Synchronization: Full support for Synchronous Ethernet (SyncE), IEEE 1588v2, and 1588 ACR (Adaptive Clock Recovery) enables precise frequency and time synchronization, critical for mobile backhaul and latency-sensitive enterprise services .

- In-Service Software Upgrade (ISSU): The distributed architecture, combined with control-plane and forwarding-plane separation, allows software upgrades to be performed without service interruption, significantly reducing maintenance windows and operational risk .

- Carrier-Grade Reliability: The control plane supports active/standby switchover, while the forwarding plane employs load balancing to maximize resource utilization. In the event of a board failure, the standby unit assumes control seamlessly .

COMPLIANCE & STANDARDS

The H901MPLB is engineered to meet the stringent requirements of carrier-grade telecommunications infrastructure. It supports standard Ethernet synchronization per ITU-T G.8261/G.8262 and IEEE 1588v2 for packet-based timing distribution . The board is compatible with Huawei's iManager U2000 and NCE management platforms, enabling integrated fault, configuration, and performance management. Environmental compliance includes operation across a temperature range of -40°C to +65°C, ensuring deployment flexibility in diverse climatic conditions .

TECHNICAL SPECIFICATIONS

The following table summarizes the core technical parameters of the H901MPLB control board.

Parameter	**Specification**
Form Factor	1RU pluggable control board (31.0 mm W x 258.9 mm D x 399.1 mm H)
Weight	2.2 kg
Switching Capacity (System)	7 Tbit/s (load sharing mode, dual MPLB)
Bandwidth per Slot	200 Gbit/s (load sharing mode)

Uplink Ports	4 x 10GE/GE SFP+/SFP
MAC Address Table	262,143 entries
Access ONTs	17,408
Multicast Users	17,408
IPv4 Routing Table	65,536 entries
IPv6 Routing Table	16,384 entries
ARP Table	66,048 (pre-V100R017C10); 98,816 (V100R017C10); 131,072 (V100R018C00+)
Power Consumption	Static: 62W; Maximum: 117W
Operating Temperature	-40°C to +65°C
Timing Support	SyncE, IEEE 1588v2, 1588 ACR

ORDERING SKU INFORMATION

The H901MPLB is identified by Huawei part number 03022RWC . Compatible hardware variants include H901MPLB, H902MPLB, and H903MPLB, all of which are designed for deployment in the MA5800-X7, MA5800-X15, and MA5800-X17 chassis . The board is available through authorized Huawei channel partners and carries a standard manufacturer warranty.


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