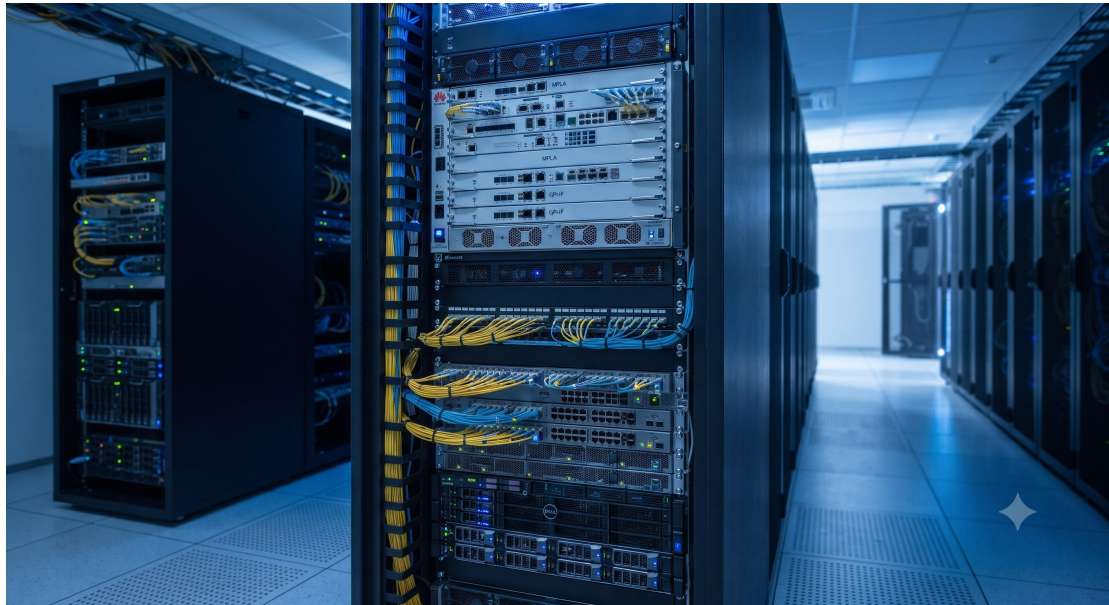


Huawei OLT Board Compatibility Matrix - Official Technical Overview & Hardware Datasheet

SYSTEMS ENGINEERING TECHNICAL REFERENCE MANUAL: HUAWEI OLT BOARD COMPATIBILITY MATRIX

1. EXECUTIVE SUMMARY

This document serves as the authoritative technical reference for the Huawei Optical Line Terminal (OLT) Board Compatibility Matrix, encompassing the SmartAX MA5600T and MA5800 series platforms. As a cornerstone of carrier-grade fiber access networks, the Huawei OLT portfolio delivers unparalleled scalability, from compact edge deployments to high-density central office installations. This datasheet details the architectural interoperability, hardware specifications, and compatibility guidelines essential for network planning and procurement. The SmartAX series supports a comprehensive range of service boards—including GPON, XG-PON, XGS-PON, and Ethernet P2P interfaces—ensuring a future-proof, modular infrastructure that seamlessly integrates with legacy equipment while paving the way for next-generation 10G and 50G PON technologies .



2. PLATFORM ARCHITECTURE & CHASSIS DESIGN

The Huawei SmartAX OLT family is engineered with a unified software and hardware architecture to minimize operational complexity and spare parts inventory. The platform is available in multiple chassis configurations to address varying capacity requirements:

- **MA5800-X17 / MA5800-X15:** High-density chassis designed for large-scale central offices and ISP core nodes. The -X17 model offers 17 service board slots, providing the highest port density in the portfolio .
- **MA5800-X7:** A medium-density chassis optimized for regional aggregation hubs, balancing capacity with physical footprint .
- **MA5800-X2:** A compact, 2-slot chassis ideal for remote terminals, enterprise premises, and space-constrained edge locations .

- **MA5600T Series (MA5680T, MA5683T, MA5608T):** The legacy yet widely deployed 3.2 Tbit/s backplane platform. The MA5680T supports 14 service slots, the MA5683T supports 6, and the MA5608T supports 2, offering a cost-effective solution for existing GPON networks .

3. COMPATIBILITY MATRIX & CONTROL PLANE INTEROPERABILITY

The core of the compatibility matrix lies in the interoperability between control boards, service boards, and chassis. The system control plane is managed by dedicated main control units that define the system' s switching capacity and feature set.

- **MA5800 Control Boards:** Designed for high-throughput 10G and 40G uplink capacities. Models such as the H901MPSPG and H901MPSPA offer varying bandwidth-per-slot configurations (up to 40 Gbit/s in load-sharing mode) and support advanced synchronization features like 1588v2 .

- **MA5600T Control Boards:** The H801SCUK provides a switching capacity of 960 Gbit/s (load-sharing mode), while the H801MCUD is optimized for the MA5608T with a 256 Gbit/s capacity .

A critical architectural distinction exists between the GPHF and GPUF service boards. While both offer 16 GPON ports, the GPHF is a converged "all-in-one"

board that integrates system control and uplink ports (2x 10GE SFP+), allowing it to function as a self-contained OLT subsystem. In contrast, the GPUF is a dedicated service unit that requires a separate main control board to operate .

4. HARDWARE FEATURES & SERVICE BOARD SPECIFICATIONS

The modular service boards support a wide spectrum of PON technologies and forwarding capacities. Key board families and their specifications include:

- ****GPON Service Boards:**** Including the GPBD (8-port), GPFD (16-port), and GPBH (8-port) variants. The GPFD and GPBH support advanced features such as 9216-byte Jumbo frames, 1588v2 time synchronization, and Class C++ optical modules for extended transmission distances of up to 40 km . The H805GPFD offers a forwarding capability of 40 Gbit/s .
- ****XG-PON and XGS-PON Boards:**** The H901XGHD provides 8 ports of 10G GPON, while the Combo PON boards (CSHF/CSHD) offer a revolutionary design supporting both GPON and XGS-PON on the same port, facilitating smooth network upgrades without changing the ODN .
- ****Ethernet Uplink Boards:**** The H801X2CS and H802X2CS provide 2-port 10GE optical uplinks, ensuring high-capacity connectivity to the core network .

5. TECHNICAL SPECIFICATIONS

All service boards are hot-swappable and comply with ITU-T G.984 series standards. The table below outlines the core performance parameters for the most prominent boards.

Board Model	Type	Ports	Forwarding Capacity	Compatible Chassis
H805GPFD	GPON	16 x GPON	40 Gbit/s	MA5600T/MA5680T/MA5683T
H806GPBH	GPON	8 x GPON	20 Gbit/s	MA5600T/MA5680T/MA5683T
H901XGHD	XG-PON	8 x XG-PON	80 Gbit/s (est.)	MA5800-X7/X15/X17
H901CSHF	Combo (XGS/GPON)	16 x Combo	200 Gbit/s	MA5800-X7/X15/X17
H802GPBD	GPON	8 x GPON	~40 Gbit/s	MA5600T Series
H801X2CS	Uplink	2 x 10GE	20 Gbit/s	MA5600T Series

6. COMPLIANCE, STANDARDS & LIFECYCLE

Huawei OLT boards are rigorously tested to meet global telecommunications standards. They support standard-compliant GPON encapsulation (GEM ports), Dynamic Bandwidth Allocation (DBA), and Forward Error Correction (FEC). The platform is designed for carrier-grade reliability, featuring Type B and Type C protection switching to ensure sub-50ms network convergence in case of link or hardware failure . Furthermore, the software compatibility across the MA5600T and MA5800 series allows for centralized management and consistent feature delivery across the entire access network, significantly reducing Total Cost of Ownership (TCO) .

