

Fiberhome FTTx Solution - Official Technical Overview & Hardware Datasheet

FIBERHOME FTTX SOLUTION - OFFICIAL TECHNICAL OVERVIEW & HARDWARE DATASHEET

EXECUTIVE SUMMARY

FiberHome, recognized as a top-tier global broadband network provider with an 11% worldwide market share, presents its comprehensive FTTx Solution, engineered to lead a seamless evolution from gigabit broadband to 100G optical networks. This solution is built around the next-generation AN6000 and AN5516 series Optical Line Terminal (OLT) platforms, which serve as the cornerstone of modern, high-capacity Passive Optical Networks (PON).

Designed for carrier-grade reliability and high-density service aggregation, the FiberHome FTTx solution supports a full range of access technologies including GPON, EPON, XG-PON, XGS-PON, and Combo PON, enabling operators to address diverse deployment scenarios from dense urban FTTH and enterprise FTTB to remote 5G backhaul and rural extensions. By unifying Layer 2 switching, Layer 3 routing, and sophisticated optical distribution, this platform dramatically flattens network topologies, reducing latency and operational expenditure while preserving capital investment.



ARCHITECTURE & CHASSIS DESIGN

The FiberHome FTTx solution is built upon a highly modular and scalable chassis architecture, designed to eliminate single points of failure and provide a future-proof foundation for network growth. The platform offers a range of chassis sizes to suit different deployment densities, all sharing a common set of service cards and software features for simplified spares management and operational consistency .

AN5516-06 (Medium Capacity).

This 6-slot chassis represents the "sweet spot" for many operators, offering a high-density, carrier-class platform in a compact 6U form factor. It features a non-blocking, dual-star backplane with a 720Gbit/s exchange capacity .

AN5516-04 (Compact Capacity).

Designed for space-constrained environments, this 2-slot, 2U chassis is ideal for remote nodes, rural deployments, and enterprise campus networks, providing flexibility without sacrificing performance .

AN6000-17 (High-Density Core).

As the flagship high-density platform, this chassis provides 17 dedicated service slots and a terabit-level non-blocking switching matrix. It is optimized for large central offices and major metropolitan hubs requiring maximum port density and subscriber aggregation .

All platforms incorporate:

- Hot-swappable components.
- Front-access design for simplified maintenance.
- A unified software architecture for seamless management across the entire OLT family.

HARDWARE FEATURES

Carrier-Grade Redundancy and Reliability

The system is engineered for 99.999% uptime, with comprehensive redundancy across all critical subsystems:

- Control & Switching Redundancy: 1:1 active/standby core switch boards (e.g., HSCA/HSCB) provide sub-50ms failover, ensuring that active user sessions are not dropped .
- Power Supply Redundancy: Dual -48V DC or optional AC power inputs with load sharing capabilities support a wide working voltage range of -38.4V to -72V, protecting against facility power fluctuations .
- Thermal Management: Intelligent, variable-speed fan trays dynamically adjust RPM based on real-time thermal loads, optimizing energy efficiency and reducing acoustic noise. The chassis supports operation in extreme temperatures from -40°C to +65°C .

Modular Interface and Service Card Ecosystem

The platforms accommodate a wide variety of specialized line cards, allowing operators to tailor the OLT to specific market needs:

- GPON Service Cards: High-density 8 or 16-port boards (e.g., GCOB) that support Class C+ optics for superior link budgets up to 32dB, enabling 1:128 splitting ratios and reaching up to 60km .
- EPON Service Cards: Boards such as the EC8B support legacy EPON networks, facilitating a phased migration to modern PON technologies .
- 10G PON Service Cards: Support for XG-PON and XGS-PON line cards provides a seamless evolution path to symmetric 10G services, protecting the initial infrastructure investment .
- Combo PON Cards: These innovative cards integrate both GPON and XGS-PON optics into a single physical port, allowing operators to offer 10G services to premium subscribers while maintaining standard GPON service for residential users over the same optical distribution network (ODN) .
- Uplink Cards: Flexible uplink options include 1GE, 10GE, 25GE, 40GE, and 100GE interfaces for high-speed connection to core networks .

COMPLIANCE & STANDARDS

The FiberHome FTTx solution adheres to a comprehensive suite of international telecommunications standards, ensuring interoperability and compliance with regulatory requirements. This includes standards for optical access, network management, and environmental resilience, making it a dependable choice for global telecom operators .

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor (AN5516-06)	6U / 19-inch Subrack (550 x 460 x 380 mm)
Form Factor (AN5516-04)	2U / 19-inch Subrack (480 x 270 x 88 mm)
Form Factor (AN6000-17)	11U / 21-inch Subrack
Backplane Capacity (AN5516-06)	720 Gbit/s
Backplane Capacity (AN5516-04)	320 Gbit/s
Supported PON Technologies	GPON, EPON, XG-PON, XGS-PON, Combo PON
Maximum PON Ports (AN5516-06)	Up to 96 (GPON) / 32 (10G PON)
Maximum Splitting Ratio	1:128 (standard), 1:256 (supported)
Maximum Logical Distance	60km (with Class C+ optics)
Power Supply	Dual -48V DC, Optional 220V/110V AC
Operating Temperature	-40°C to +65°C
Humidity	5% to 95% (non-condensing)
Layer 2/3 Features	Wire-speed forwarding, VLAN/QinQ, OSPF, BGP, IGMP
Synchronization	IEEE 1588v2, SyncE, 1PPS+ToD

Reliability	1+1 Control/PSU/Fan Redundancy, <50ms failover
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ORDERING OPTIONS

FiberHome provides a comprehensive suite of equipment to build a complete end-to-end FTTx solution. The offering is divided into active and passive components, ensuring seamless integration from the central office to the subscriber premises.

Active Equipment:

- OLT Platforms: AN6000-17, AN5516-06, AN5116-06B, AN5516-04.
- Service Cards: GPON, EPON, 10G PON (XG-PON/XGS-PON), Combo PON, P2P GE/FE cards.
- Core Switch & Control Boards: HSUA, HSUB, HSUC for high-availability control and switching.
- ONU/ONT Series: A full range of Optical Network Units for various scenarios, including:
 - AN5506-04: Single-family unit (SFU) ONT offering 1GE, 4GE, 4GE+2POTS, WiFi, and CATV interfaces .

- HFA-Series High Power OPAMS: For CATV signal amplification and wavelength combination .
- Network Management System: FiberHome ANM2000 for centralized, end-to-end network management and service provisioning .

Passive Equipment:

- Optical Distribution Network (ODN) Equipment: Passive optical splitters, distribution frames, and drop cables.
- Other: Drop cables and associated passive infrastructure .

