Fiberhome Fonst 3000 - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Fiberhome FONST 3000 is a next-generation, OTN-based multi-service intelligent WDM transmission platform. Engineered for the demanding environments of backbone core, metropolitan core, aggregation, and edge access layers, the FONST 3000 delivers an exceptional combination of superior scalability, carrier-grade reliability, and comprehensive service adaptability .

At its core, the platform supports high-density 100Gbit/s long-haul transmission with a total system capacity scaling up to 9.6Tb/s . This robust performance, coupled with a significant 360G OTH electrical cross-connect scheduling capability, establishes the FONST 3000 as the cornerstone for building flexible, high-bandwidth transport networks designed for future growth .

ARCHITECTURE & CHASSIS DESIGN

The FONST 3000 utilizes a compact and robust 28-slot chassis architecture, providing 26 slots dedicated to service access modules . This design enables maximum configuration flexibility for diverse networking requirements. The chassis is built upon a high-speed, non-blocking backplane optimized for OTN switching fabrics, ensuring efficient handling of mixed 10G, 40G, and 100G services.

Key architectural features include:

- **Scalable Cross-Connect**: A 360G OTH electrical cross-connect capacity that supports ODUk (k=0/1/2) granularity switching, enabling efficient grooming and centralized scheduling of services .

- **Flexible Topology Support**: Native support for ROADM-based dynamic wavelength scheduling, enabling highly flexible and reconfigurable optical networks. The platform supports a wide range of topologies, including ring, multi-ring interconnect, mesh, and linear add/drop configurations .
- **Comprehensive Service Adaption**: A vast library of client-side interfaces ensures seamless integration with existing and next-generation equipment, supporting legacy protocols like STM-1/4/16/64/256 and modern Ethernet (GE/10GE/40GE), as well as a range of SAN and video protocols .

HARDWARE FEATURES

The FONST 3000 is equipped with advanced hardware features to ensure network stability, high availability, and effortless maintainability.

High Reliability & Redundancy: The platform incorporates multiple layers of protection to guarantee service continuity .
- **Equipment-Level Redundancy**: Critical subsystems such as power supplies (1+1 AC/DC), network element management units, and the electrical cross-connect unit are fully redundant and hot-swappable .
- **Network-Level Protection**: Comprehensive support for optical layer (OCH 1+1, OCH m:n, Optical Line 1:1) and electrical layer (ODUk 1+1, ODUk m:n, ring network) protection schemes, including the use of OCP cards for 1+1

wavelength protection with switching times under 30ms .

Advanced Maintenance & Management: Intelligent features drastically reduce operational overhead.

- **IAMS Integration**: Includes an Integrated Maintenance System (IAMS) for advanced alerting, performance analysis, early warning capabilities, and rapid fault localization .

- **Automated Optimization**: Features such as automatic optical power balancing, line power control, and compensation significantly reduce the need for manual intervention and lower operational costs .

COMPLIANCE & STANDARDS

The FONST 3000 is engineered to meet the highest international standards for safety, electromagnetic compatibility, and environmental performance .

- **Safety**: EN60825-1, EN60825-2, EN60950-1, IEC60825-1, IEC60825-2, IEC60950-2001, UL60950-1:2003 .

- **EMC**: IEC61587, IEC60917, IEC60297, IEC60297 .

- **Optical & Timing**: Full compliance with G.709 OTN standard, ITU-T G.694.1 wavelength grid, and support for IEEE 1588v2 and SyncE for precise time/frequency synchronization .

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	28-Slot Subrack, 947mm(H) x 496mm(W) x 285mm(D)
Switching Capacity	System Transmission: Up to 9.6 Tb/s (96 x 100G) | OTH Cross-Connect: 360G (ODUk k=0/1/2)
Service Slots	26 slots for service access
Supported Service Interfaces	STM-1/4/16/64/256, GE/10GE/40GE, SAN, OTU1/2/3/4, DVB/HDTV
Protection Schemes	Optical: OCh 1+1, OCh m:n, Optical Line 1:1, Optical Channel 1+1 | Electrical: ODUk 1+1, ODUk m:n, Ring Network
Synchronization	Physical Layer Clock Sync, SyncE, IEEE 1588V2
Power Supply	1+1 Redundant, Hot-swappable AC/DC options
Typical Power Consumption	1500W
Environmental & Safety Compliance	EN60825-1, EN60950-1, IEC61587, IEC60297

The following table provides a detailed overview of the platform's core technical parameters.

ORDERING OPTIONS

The FONST 3000 offers a modular and flexible ordering structure, allowing network operators to tailor the system to their exact requirements. The platform supports a wide array of functional modules to address specific network challenges. Key modules include:

- **Optical Transponder Cards**: Including the MST2 (8-port any-service) and OTU2S (10G bidirectional), offering a range of client and WDM side optical interface options for distances from 15km to 80km .
- **Optical Multiplexer/Demultiplexer Cards**: Such as the OMU48_O (48-channel, C/O band) and ODU48_E (48-channel demultiplexer with variable attenuator), enabling high-density wavelength division and management .
- **Optical Amplification & Supervision Cards**: The OA card provides signal amplification, while the OSCAD card manages optical supervisory channel functions .
- **Protection Cards**: The OCP card provides fast optical channel protection (switching under 30ms) to ensure service resilience .

- **Dispersion Compensation Modules (DCM)**: To mitigate dispersion effects in long-haul networks, ensuring signal integrity over G.652 and G.655 fiber types .