Nokia ISAM 7360 FX - Official Technical Overview & Hardware Datasheet

NOKIA ISAM 7360 FX PLATFORM SPECIFICATION & ARCHITECTURAL WHITEPAPER

EXECUTIVE SUMMARY

The Nokia 7360 Intelligent Services Access Manager (ISAM) FX represents a paradigm shift in carrier-grade fiber access infrastructure. As a third-generation OLT system with application enablement capabilities, it transcends the limitations of traditional internet access and triple-play platforms to deliver a truly unified, multi-service access solution . Designed as the cornerstone of next-generation networks (NGN), the 7360 ISAM FX consolidates multiple access technologies — including GPON, XGS-PON, TWDM-PON (NG-PON2), EPON, 10G EPON, and Point-to-Point (P2P) fiber—onto a single, high-density chassis . This platform empowers service providers to seamlessly evolve their networks from current gigabit services to future 50G PON standards while protecting existing investments in both active and passive infrastructure .

ARCHITECTURE & CHASSIS DESIGN

The 7360 ISAM FX is built upon a non-blocking, high-capacity backplane architecture that delivers 2x100Gb/s to each line termination (LT) slot, ensuring wire-speed performance across all user-facing ports . The platform is available in three modular chassis variants, offering scalability to suit any deployment scenario from enterprise POL to mass-market FTTH .

- **FX-4**: A compact 5RU chassis with 4 service slots, ideal for distributed access nodes and enterprise environments .
- **FX-8**: An 8RU mid-range chassis with 8 service slots, designed for regional central offices and cabinet deployments .
- **FX-16**: A high-density 14RU chassis with 16 service slots, optimized for large-scale central office and core POP installations .

Key Chassis Specifications

- **Form Factor:** ETSI/19-inch rack-mountable .

- **Backplane Bandwidth:** 6.4 Tb/s .

- **Switching Capacity (Per Controller):** FANT-G: 2 Tb/s (Bidirectional) / FANT-F: 480 Gb/s (Bidirectional) .

- **Redundancy:** Full 1+1 redundancy for power supplies (AC/DC) and main control boards (Active/Active or Load Sharing modes) .

HARDWARE FEATURES

The system is driven by the Nokia-proprietary Quillion chipset, delivering high performance, security, and energy efficiency . The hardware architecture is meticulously designed to support a wide array of service modules, enabling flexible and future-proof service delivery .

Line Cards (LTs)

- **GPON (FGLT-A/B):** High-density 8 or 16-port cards supporting 1:128 split ratios .

- **NG-PON (FWLT-B):** Universal 8-port line card supporting XGS-PON (10G Symmetrical/Asymmetrical) and TWDM-PON (NG-PON2) on the same hardware .

- **Combo PON:** 16-port cards supporting XGS-PON/GPON Combo ports for seamless coexistence of legacy and next-gen technologies .
- **P2P/Ethernet:** Dedicated cards for point-to-point fiber connectivity .
- **VDSL2:** Line cards with integrated vectoring for copper-based fiber extension .

Control & Uplink

The modular control cards (FANT-F/G) integrate the system’ s routing engines and provide flexible uplink connectivity to the aggregation network .
- **Network Termination (NT):** Integrated into the main control cards, offering up to 40Gb/s network capacity (configurable 1/10GbE ports).
- **Network Termination Input/Output (NTIO):** An optional expansion module that provides an additional 80Gb/s uplink capacity via 8x SFP+ cages .

COMPLIANCE & STANDARDS

The Nokia 7360 ISAM FX adheres to the highest industry standards for telecom equipment, ensuring seamless interoperability and regulatory compliance.

- **Optical Standards:** ITU-T G.984 (GPON), G.987 (XG-PON), G.9807 (XGS-PON), G.989 (NG-PON2), and IEEE 802.3ah (EPON) .
- **Management Protocols:** Full support for SNMP/MIB for legacy OSS

integration and NETCONF/YANG models for SDN/NFV orchestration .

- **Timing & Synchronization:** SyncE, IEEE 1588v2 (PTP), and BITS for high-precision mobile backhaul applications .

- **Routing & Switching:** MPLS, IPv6, OSPF, BGP, and ERPS (G.8032) for carrier-grade resiliency .

Parameter	**Specification**
Form Factor	FX-4 (5RU), FX-8 (8RU), FX-16 (14RU)
Service Slots	FX-4: 4; FX-8: 8; FX-16: 16
Backplane Bandwidth	2x100 Gb/s per slot; 6.4 Tb/s total
Switching Capacity	FANT-G: 2 Tb/s; FANT-F: 480 Gb/s (Bidirectional)
Uplink Capacity	Max 160 Gb/s (with dual controllers and NTIO)
Supported Technologies	GPON, XGS-PON, TWDM-PON, EPON, 10G EPON, P2P, VDSL2
Power Supply	1+1 Redundant, -48/-60V DC or AC
Operating Temperature	-40°C to +65°C
Dimensions (W x H x D)	FX-16: 500 x 600 x 280 mm
MTBF	> 200,000 hours (Telcordia SR-332)

ORDERING OPTIONS (SKU)

The 7360 ISAM FX is available as a base chassis with configurable control boards, power supplies, and service line cards. Typical configurations include complete turnkey solutions pre-equipped with dual FANT-F control cards and a starter set of GPON or Combo PON line cards .

Base Chassis Options

- **3HE12345AA (FX-4):** 4-slot chassis (5RU).
- **3HE12345AB (FX-8):** 8-slot chassis (8RU).
- **3HE12345AC (FX-16):** 16-slot chassis (14RU).

Control & Uplink Modules

- **FANT-F:** 480Gb/s Switching Controller with 4x 1/10GbE uplink ports .
- **FANT-G:** 2Tb/s High-Capacity Switching Controller .
- **FNIO-A (NTIO):** 8-port 1/10GbE Uplink Expansion Module .

Service Line Cards

- **FGLT-A/B:** 8/16-port GPON Line Card .
- **NGLT-A/C:** 16-port XGS-PON/GPON Combo Line Card .
- **FWLT-B:** 8-port Universal NG-PON (XGS-PON/TWDM-PON) Line Card .

TECHNICAL SPECIFICATIONS

System Capacity

- **Max PON Ports (FX-16):** Up to 256 GPON ports or 128 XGS-PON Combo ports .

- **Total System Capacity (FX-16):** 10 Tb/s .

- **Subscriber Scale:** Supports up to 8,192 subscribers (at 1:32 split) per fully equipped FX-16 shelf .

Physical Dimensions

- **FX-4:** 445mm x 223mm x 280mm (WxHxD) .

- **FX-8:** 445mm x 360mm x 280mm (WxHxD) .

- **FX-16:** 500mm x 600mm x 280mm (WxHxD) .

Environmental & Power

- **Operating Temperature:** -40°C to +65°C (Industrial grade) .

- **Humidity:** 5% to 93% (Non-condensing) .

- **Power Input:** -48/-60V DC (Redundant) .