Nokia Lightspan DF-32GM

The Nokia Lightspan DF-32GM is a high capacity mini-OLT optimized for low-density fiber access deployments. It supports future-proof, high-bandwidth services over multiple Passive Optical Network (PON) technologies including GPON, XGS-PON and 25G PON. The Nokia Lightspan DF-32GM is based on the Nokia Quillion chipset and combines market-leading density, throughput, low latency, and energy efficiency that is 25% ahead of the industry. It enables fiber access to be a single infrastructure for the delivery of all services across all technologies: residential, business, and 5G transport.

The Nokia Lightspan DF-32GM is a compact design, one rack unit (1RU) 32-port fiber access node (optical line terminal, OLT) that supports a variety of fiber technologies including Gigabit Passive Optical Network (GPON), 10 Gigabit PON (XGS-PON), GPON/XGS-PON Multi-PON and 25G PON, with a total system throughput of full duplex 600 Gbps.

The Nokia Lightspan DF-32GM is suitable for use in a variety of deployment scenarios: its small form factor makes it ideal for communications service providers and cable operators to use in low density residential and business areas, and to fill coverage gaps. It has TSN-grade (time-sensitive networking) capabilities enabling operators to use existing fiber assets for efficient 5G transport.

Service providers have maximum flexibility for deploying Lightspan DF-32GM in central office or data center, building basements or outside plant cabinet, in distributed or disaggregated architecture.

Lightspan DF-32GM (DC / DC powered)

Lightspan DF-32GM (AC / Battery backup powered)

Lightspan DF-32GM enables simple and cost-efficient network evolution today and in the future. It supports Multi-PON mode to deliver GPON and XGS-PON services from a single port.

As a member of the Lightspan product family, it fully supports SDAN (Software-Defined Access Networks) for network slicing, zero-touch operations, and intent-based networking.

Key benefits

- Optimized fiber deployments for low-density residential and business areas
- More revenues with new services for residential broadband, Industry 4.0, 5G Anyhaul, and wholesale
- Enhanced operations efficiency with SDAN:
  - Automated operations
  - Fast telemetry
  - Agile software upgrades
- Efficient 5G transport over fiber access
- Future-proof capacity enables enhancements on the same hardware in a very efficient way
- Reduced energy costs with power consumption ahead of sustainability targets

Key features

- Pizza box design enabling small scale deployments
- 25% lower power consumption than the industry average thanks to Quillion-based hardware
- Future-proof capacity, up to 32 GPON ports; up to 16 XGS-PON/ Multi-PON ports; hardware ready for up to 8 25G PON ports
- Rich synchronization features and low latency for 5G transport
- Distributed deployment in central office, outdoor cabinet or building basement
- Disaggregated deployment in a data center environment
- Designed for high reliability

Technical specifications

Full-service platform

- Multiservice access support
  - IPTV services
  - Multimedia service
  - High-speed internet access
  - Business access
  - 5G Mobile Anyhaul
- Downlink support
  - 16-port Multi-PON supporting GPON, XGS-PON and Multi-PON mode
  - 32 port GPON using Dual-GPON SFP-DD optics
  - Hardware ready for 8-port 25G PON
- Uplink support:
  - 4 x 100 GigE using a QSFP28 cage
  - 2 x 1 or 10 GigE using SFP+ cages
  - 600 Gb/s switching matrix (bidirectional)
- Synchronization:
  - SyncE frequency synchronization
  - IEEE 1588v2 PTP frequency and phase synchronization

Management

- SDN controllable via NETCONF/YANG
- Support for IPFIX bulk statistics collection
- Fully managed by the Nokia Altiplano Access Controller

Eco-sustainability

- Product complies with the EU Directive 2011/65/EU as amended including by Directive 2015/863/EU concerning the Restriction on Hazardous Substances (RoHS) for lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenyl ether (PBDE), Bis(2-Ethylhexyl) phthalate (DEHP), Benzyl butyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP)
- Product collection and treatment under Nokia responsibility complies with national laws on product treatment applied at the end of life for Wastes from Electrical and Electronic Equipment (WEEE) implementing the European Directive (2012/19/EU)
- Product packaging materials are free from hydrochlorofluorocarbon (HCFC)

- Plastic product packaging material is marked according to ISO 11469, referring to ISO 1043 (97/129/EEC)

Standards compliance

- Environmental
  - ETS EN 300 019-1-1 storage – Class 1.1 weather-protected, partly temperature-controlled locations
  - ETS EN 300 019-1-2 transport – Class 2.3 public transportation
  - ETS EN 300 019-1-3 stationary use – Class 3.1E and Class 3.3 (-40C to +65C, no condensation)
- Powering
  - ETS EN 300 132-1 (AC powered)
  - ETS EN 300 132-2 (DC powered)
- Protection
  - ITU-T K.20 enhanced and K.45 basic
- Safety
  - IEC/UL 62368-1
  - IEC/EN 62368-1
  - UKCA
- EMC
  - ETSI EN 300 386 for telecommunications center installation environment
  - ETSI ES 201 468
  - FCC 47 CFR Part 15
  - CISPR 32 Ed 2
- Acoustic noise
  - ETSI 300 753

Operating conditions

- Operating temperature range: -40°C to +65°C (-40°F to +149°F)
- Over-temperature sensors and over-temperature shutdown
- Replaceable low noise fan module and dust filter

Power

- Field replaceable AC, DC and Battery backup module
- Power module redundancy (DC+DC, AC+Battery)
- Input
- DC-powered:
  - -40.5~-72V DC (-48V nominal)
- AC-powered:
  - 110~240V AC - input frequency 50 Hz-60 Hz

Dimensions

- Width: 444mm (17.48 in) (excluding brackets)
- Depth: 274 mm (10.79 in)
- Height: 44 mm (1.73 in) (1 RU)