

## Nokia Lightspan DF-16GM

The Nokia Lightspan DF-16GM is a small size, high-bandwidth capacity software-defined fiber access node designed to power next generation massive scale access networks. It supports Gigabit and 10 Gigabit services over multiple Passive Optical Network (PON) technologies including GPON, XGS-PON and 25GS-PON. The Nokia Lightspan DF-16GM is based on the Nokia Quillion chipset and combines market-leading density, throughput, and low latency. 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-16GM is a compact design one rack unit (1RU) fiber access node (optical line terminal, OLT) that supports variety of fiber technologies including Gigabit Passive Optical Network (GPON), 10 Gigabit PON (XGS-PON), GPON/XGS-PON Multi-PON and 25GS-PON, with a total a system throughput of full duplex 200 Gbps.

The Nokia Lightspan DF-16GM is suitable for use in a variety of deployment scenarios: mobile transport; small-scale residential services in multi-dwelling units (apartment buildings) and delivery of business services to hotels, stadiums, office buildings etc. 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-16GM in the central office, building basements or outside plant cabinet.



Lightspan DF-16GM enables simpler 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

- Secure investment in high-capacity node and next-generation fiber technologies
- Multi-Gigabit connectivity to homes, businesses and small cells
- Enhanced operations with SDAN
- Efficient 5G transport over fiber access
- Simple PON evolution with Multi-PON

## Key features

- Pizza box design enabling small scale deployments
- Up to 16 GPON ports; up to 8 XGS-PON/multi-PON ports; hardware ready for up to 4 25GS-PON ports
- Unmatched low latency for 5G transport
- Managed by Nokia Altiplano

## Technical specifications

### Full-service platform

- Multiservice access support
  - IPTV services
  - Multimedia service
  - High-speed internet access
  - Business access
  - Cell-site backhaul
- Downlink support
  - 8-port multi-PON supporting GPON, XGS-PON and multi-PON mode
  - 16-port GPON
  - Hardware ready for 4-port 25GS-PON
- Uplink support:
  - 1 x 100 GigE using a QSFP28 cage
  - 4 x 1 or 10 GigE using SFP+ cages
  - 200 Gb/s switching matrix (bidirectional)

### Management

- 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 the 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 (assuming no condensation and icing)
- 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
  - VCCI
  - 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 or DC power modules
- Power module redundancy (DC+DC, hardware ready for AC+Battery)
- Input
- DC-powered:
  - -40.5~-72V DC (-48V nominal)
- AC-powered:
  - 100~240V 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 inch) (1 RU)

## About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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