Nokia Multi-PON card

FWLT-C

Nokia Multi-PON FWLT-C is a new generation passive optical network (PON) line card, that supports multiple PON technologies and easy migration from current to next-generation technologies. Based on the Nokia Quillion chipset, it delivers performance to supercharge fiber networks for future growth. The high capacity, high density and low latency of FWLT-C enable operators to increase the efficiency and utilization of their fiber networks by delivering all residential, enterprise and mobile transport services from a single platform.

The Nokia Multi-PON FWLT-C is a truly universal PON line card deployable in Nokia FX access nodes. Each port can support GPON, XGS-PON, GPON and XGS-PON simultaneously, NG-PON2 (TWDM-PON) or 25GS-PON, giving operators flexibility to deliver services with the best-fit technology. For example, operators can start with GPON services today and, when needed, remotely switch users to XGS-PON, using less equipment, cabling, and migration effort. It is a unique solution on the market as it ensures smooth evolution to 25 Gb/s symmetrical speeds, enabling operators to offer premium services from the existing line card.

- Available in Nokia Lightspan FX series, including ISAM FX and Lightspan FX access nodes (FX-16, FX-8, FX-4)
- TSN-grade ready for 5G mobile transport
- Based on Quillion chipset for high density, high throughput, low latency, low power consumption

Benefits

- Makes fiber access networks 10 Gb/s and 25 Gb/s ready from day one
- Accelerates time-to-market for symmetrical premium symmetrical services
- Enables:
  - Smooth migration from GPON to XGS-PON in a pay-as-you-grow model
  - Evolution to 25G PON on the same hardware
  - Cost-efficient 5G transport over the FTTH network
  - Service convergence on a single platform and line card
- Easy introduction on an existing Nokia FX footprint

Features

- Universal 16-port PON card, each port supporting various modes of operation:
  - GPON
  - XGS-PON dual rate
  - Multi-PON with embedded co-existence functionality to support GPON and XGS-PON simultaneously
  - NG-PON2 (TWDM-PON)
  - 25G symmetrical PON on even ports

Technical specifications

Interfaces

- Universal 16-port PON card for all flavors of ITU-T PON technologies, with pluggable optics supporting various ODN link budgets, reach and temperature grades.
  - ITU-T: G.9807.1: 10-Gigabit-capable symmetric passive optical network (XGS-PON), including dual-rate upstream and compatibility with XG-PON ONUs (G.987 series)
  - ITU-T G.984.1, .2 and .3 series: GPON
  - ITU-T G.989.1, .2 and .3 series: 40-Gigabit-capable passive optical networks (NG-PON2 TWDM-PON)
  - 25GS-PON MSA specification for 25GS-PON
- WDM-based Multi-PON Modules for GPON and XGS-PON co-existence (ITU-T G.984.5 Amendment 1 Appendix IV)
- Up to 200 Gb/s backplane capacity to/from NT controller

Operation conditions

- -5°C to 45°C (23°F to 113°F) inlet/ambient temperature range, when used in fully populated ISAM FX rack.
- Ready to support I-temp optics for -40°C to 65°C (-40°F to 149°F) inlet/ambient temperature range
- Over-temperature sensors and over-temperature shutdown
- Humidity: 10% to 95% (non-condensing)

Dimensions

- Height: 405 mm (15.94 in)
- Depth: 225 mm (8.85 in)

Environmental compliance

- ETS 300 019-1-1 storage – Class 1.1 (weather protected, partly temperature-controlled locations)
- ETS 300 019-1-2 transport – Class 2.3 (packed, public transportation)
- ETS 300 019-1-3 stationary use – Class 3.1E (temperature-controlled locations), when used in fully populated Nokia FX racks (with more than one shelf)

Protection compliance

- ITU-T K.20/K.45

Safety compliance

- IEC 60950-1/EN60950-1
- EMC and ESD: ETS 300 386 V1.3.3 (2005-04) for telecommunications network equipment
- European directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS) shutdown