Nokia ONT G-010S-Q

GPON SFP ONT

The Nokia Optical Network Terminal (ONT) G-010S-Q is the answer for home networking delivered by Gigabit Passive Optical Network (GPON) Small Form-Factor Pluggable (SFP). The device is G.984.x (1/2/3/4/5) compliant with SFP packaging and integrates a bidirectional optical transceiver function with a GPON media access control (MAC) layer function. It provides a Gigabit Ethernet (GigE) service to any device capable of hosting this SFP, such as Ethernet switches, wireless backhaul equipment, Ethernet access devices (EADs), routers, remote digital subscriber line access modules (DSLAMs), and other customer premises equipment (CPE). The Nokia ONT G-010S-Q is designed to take advantage of Nokia award-winning management platforms.

Features

- Optics support received signal strength indication (RSSI)
- GPON ONT in a SFP multiple source agreement (MSA) footprint
- Compliant to Full Service Access Network (FSAN) G.984.x specifications
- Passive Optical Network (PON) link status notification
- Dying gasp notification
- ONU management and control interface (OMCI) specification
- Internet Group Management Protocol (IGMP) functions
- G.988 OMCI compliant
- Support of 2.5G and 1G Ethernet UNI modes of operation

Benefits

- Small Form-Factor Pluggable (SFP)
- GPON anywhere, backhauls any Ethernet device with GPON
- Little space needed to convert an Ethernet box into a GPON capable box
- Easy to install
- Low power consumption
- Increased end-user experience as the existing box can be easily upgraded to GPON
- More efficient use of the fiber facilities
- Ideally suited for business services and to subtend remote nodes
- Easily upgrade existing CPE to GPON fiber connectivity

Technical specifications

GPON uplink

- 1490 nm wavelength downstream, 1310 nm wavelength upstream
- 2.488 Gb/s line rate downstream, 1.244 Gb/s line rate upstream
- GPON Encapsulation Method (GEM) mode support for IP/Ethernet service traffic support
- Mutiple GEM ports per device
- Flexible mapping between GEM Ports and T-CONT
- ITU-T G.984.3-compliant dynamic bandwidth reporting (DBR)
- ITU-T G.984.3-compliant Advanced Encryption Standard (AES) in downstream
- ITU-T G.984.3-compliant forward error correction (FEC)
- ITU-T G.988 Appendix 1 and Appendix 2 ONT Management and Control Interface (OMCI)
- Remote software image download
- SFF type laser, SC/APC connector

Optical

Transmitter

- 0.5–4 dBm average output power
- 1 nm spectral width (-20 dB)
- 250 ps optical rise/fall time (20% to 80%)
- 0.2UI jitter generation
- Transmitter output eye compliant with G.984.2.

Receiver

- -47 dB crosstalk 1310 nm Tx to 1490 nm Rx
- 30 dB isolation ext 1550–1490 nm Rx
- -27.5 to -8 dBm received optical power
- -27 dBm signal detect assertion level
- -40 dBm signal detect de-assertion level
- 0.5–5 dB hysteresis
- -3 to +3 dB RSSI accuracy
- G.984.5 wavelength blocking filter isolation:
  - 7 dB at 1530nm
  - 22 dB at 1539nm
  - 30 dB at 1560–1625nm.

Operations, administration, and maintenance (OA&M)

- Standard compliant OMCI (the embedded operations channel) interface as defined by ITU-T G.984.4 and ITU-T G.988
- Support WebGUI for the ONU. Authentication password configuration from a LAN port on the hosting switch or router
- Management information base (MIB) manipulation over OMCI with create, delete, set, get and get next commands
- Alarm reporting and performance monitoring
- Remote software image download over OMCI, as well as activation and rebooting
- Supports subscriber line identifier (SLID) using WebGUI

Physical

- Height: 11.8 mm (0.46 in)
- Width: 14 mm (0.55 in)
- Depth: 72 mm (2.83 in)
- Weight: 0.028 kg (0.06 lb)

Operating environment

- Temperature (case):
  -40°C to 85°C (-40°F to 185°F)
- Relative humidity: 5% to 95%

Power requirement

- Local powering via 3.3V MSA interface (Host sourced)
- Dying Gasp support: Host support required
- Power consumption: <1.6W

Safety and electromagnetic interference (EMI)

- Protection of over voltage/current

Regulatory compliance

- CE Mark
- CB Mark
- FDA 21CFR 1040.10 and 1040.11

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