Nokia G-010G-R Single Port GPON Desktop ONT - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Nokia G-010G-R is a residential bridge Optical Network Terminal (ONT) engineered for Gigabit Passive Optical Network (GPON) fiber-to-the-home (FTTH) deployments. This desktop-mount unit terminates a standard-compliant GPON interface and delivers Ethernet services to the subscriber through a single Gigabit Ethernet port with dynamic burst capability up to full gigabit line rate . The G-010G-R is a temperature non-hardened bridge ONT suitable for indoor environments, managed remotely via the Nokia 5520 Access Management System (AMS) using the standard ONT Management Control Interface (OMCI) for full FCAPS support .



HARDWARE ARCHITECTURE & THERMAL DESIGN

The G-010G-R employs a compact, fanless desktop chassis constructed for passive thermal dissipation. The enclosure measures 89 mm in height, 82 mm in width, and 27 mm in depth, with a total weight of approximately 0.1 kg, permitting flexible desk or wall mounting configurations . The absence of active cooling components eliminates acoustic noise and reduces mechanical failure points, aligning with carrier-grade expectations for subscriber premises equipment.

Thermal operating parameters define the G-010G-R as an indoor-use device with a rated operating temperature range of 5°C to 40°C under continuous conditions. Short-term operation is specified from -5 ° C to 50 ° C, accommodating transient environmental excursions. Relative humidity tolerances are 5% to 85% for continuous operation and 5% to 95% for short-term exposure . Power consumption is optimized for always-on residential service, with standby mode drawing 2.35 W and typical operation consuming 2.27 W .

KEY FEATURES & SERVICE CAPABILITIES

- GPON Interface: Single SC/APC fiber port compliant with ITU-T G.984 series

standards, supporting upstream wavelengths of 1290–1330 nm (typical 1310 nm) .

- Ethernet User Port: One RJ-45 10/100/1000BASE-T port with auto-negotiation and MDI/MDIX auto-sensing .

- Layer 2 Networking: IEEE 802.1Q VLAN tag manipulation, classification, and filtering; IEEE 802.1p QoS priority handling .

- Multicast Support: IGMP v2/v3 snooping with dedicated multicast GEM port support .

- Security: AES decryption with key generation and switching for downstream traffic protection .

- Management: OMCI-compliant remote provisioning and FCAPS via Nokia 5520 AMS .

- Optical Diagnostics: Received signal strength indication (RSSI) support and forward error correction (FEC) in both directions .

COMPLIANCE & STANDARDS

The G-010G-R is fully compliant with the ITU-T G.984 GPON standard series and the G.984.4 OMCI specification for ONT management and provisioning . The device is classified as a Class 1 Laser Product, with maximum optical output power rated at +5 dBm . The ONT supports standard GPON management mechanisms including loopback detection, performance monitoring, and alarm

reporting. Energy Efficient Ethernet functionality is supported for reduced power consumption during low-traffic periods .

TECHNICAL SPECIFICATIONS

Parameter	**Specification**
Form Factor	Desktop/Wall-mount bridge ONT, fanless passive cooling
Dimensions (H × W × D)	89 mm × 82 mm × 27 mm (3.5 in × 3.2 in × 1.1 in)
Weight	0.1 kg (0.22 lb)
GPON Interface	1 × SC/APC, ITU-T G.984 compliant
Uplink Wavelength	1290–1330 nm (typical 1310 nm)
Ethernet Interface	1 × 10/100/1000BASE-T RJ-45, auto-negotiation, MDI/MDIX
Operating Temperature	5°C to 40°C (continuous); -5°C to 50°C (short-term)
Relative Humidity	5% to 85% (continuous); 5% to 95% (short-term)
Power Consumption	Standby: 2.35 W; Typical: 2.27 W
Power Input	12V DC, 0.5A external adapter
Laser Classification	Class 1 Laser Product

Max Optical Output Power	+5 dBm
Management	OMCI (G.984.4), Nokia 5520 AMS, FCAPS
VLAN/QoS	IEEE 802.1Q, IEEE 802.1p
Multicast	IGMP v2/v3 snooping, dedicated multicast GEM port
Security	AES decryption with key generation
Mounting Options	Desktop or wall mount

ORDERING SKU INFORMATION

| Parameter | Specification |

|-----------|---------------|

| Model Designation | Nokia G-010G-R |

| Product Type | Single-port GPON Bridge ONT |

| GPON Connector | SC/APC |

| Ethernet Ports | 1 × 10/100/1000BASE-T RJ-45 |

| Power Input | 12V DC, 0.5A via external AC/DC adapter |

| Mounting | Desktop or wall mount |

| Operating Temperature | 5°C to 40°C (continuous); -5°C to 50°C (short-term) |

| Humidity | 5%–85% RH (continuous); 5%–95% RH (short-term) |

| Dimensions (H×W×D) | 89 × 82 × 27 mm |

| Weight | 0.1 kg (0.22 lb) |

| Power Consumption | 2.35 W standby; 2.27 W typical |

