

AONT-1040

GPON Optical Network Terminal Single Family Unit Gateway



Feature Summary

- ◆ Indoor wall or table mount
- ◆ Four 10/100Base-T Ethernet RJ-45 Ports
- ◆ 802.11b/g/n wireless interface
- ◆ Built-in L3 routing gateway with NAT/NAPT and Firewall
- ◆ Built-in L2 wire-speed switch, 128/256 MAC addresses and 16/32 VLAN VIDs
- ◆ MAC address limiting
- ◆ Customer VID (VLAN ID) tagged (802.1Q), priority tagged (802.1p) and untagged frames, Stacked VLAN (Q-in-Q)
- ◆ ToS/DSCP to 802.1p mapping
IGMPv1/v2/v3 snooping and filtering
- ◆ Ethernet UNI output shaping, and upstream scheduling
- ◆ GPON “dying gasp” power loss indication

Applications

The AONT-1040 has been optimized for single family homes or apartments and small home offices (SOHO) or small businesses.

High Bandwidth GPON

The AONT-1040 is fully FSAN (ITU-T G.984) compliant with a 1.244 Gb/s upstream and 2.488 Gb/s downstream, Class B+ GPON system. In addition, it supports downstream AES (128-bit key) and downstream and/or upstream FEC RS(255,239).

Ethernet Quality of Service

The AONT-1040 has extensive Ethernet QoS features, including 802.3x flow control, DSCP to 802.1p mapping, upstream congestion control, and downstream traffic scheduling for premium or time sensitive content. Intelligent and robust buffer and queue management for Ethernet traffic, with individual prioritizable queues, ensures that tiered residential service offerings based on different bit-rates and QoS can be supported.

Gateway

The AONT-1040 contains both a built-in wire-speed L2 802.1Q VLAN switch and a built-in L3 routing gateway with Port forwarding, NAT and NAPT address translation, built-in PPPoE support for HSI, and an integrated stateful Packet Inspection Firewall with a configurable Access Control List (ACL) and application-level gateway (ALG). Support for VPN (L2TP, PPTP and IPSec) pass through is also provided. As part of the gateway function there is a DHCP Client and server, and a DNS server.

Security

The AONT-1040 comes with the latest security features, including MAC address spoofing protection, MAC/IP address port binding, MAC/IP address limiting on a per port basis, per-port Access Control List (ACL) based on port, MAC address and Ether-type, DOS prevention, WEP, and WPA/WPA2.

Flexible Management

The AONT-1040 is managed from the AOLT-4000 OLT over the GPON's OMCI channel. The AOLT in turn is managed with either Alphion's Element Management System (AEMS) that provides configuration, profile based provisioning, event and fault management and performance monitoring for the AONT, or with a 3rd party EMS using SNMP or a legacy NMS.

SPECIFICATIONS



Optical Interface

Standard	GPON; Fully ITU-T G.984 compliant
Link Budget	28 dB (Class B+) ITU G.984.2 Amd1
Wavelength	Upstream: 1310 nm; Downstream: 1490 nm
Line rate	Upstream: 1.244 Gb/s; Downstream: 2.488 Gb/s
Output power	+0.5 to +5.0 dBm
Sensitivity*	-27 dBm (at 10 dB extinction ratio)
Overload	-8 dBm
Distance	up to 60 km (depending on split ratio and reach extension)
Connector	SC/APC

GPON TC Layer

FEC & AES	AES (128-bit key) and FEC RS(255,239)
DBA	Yes
No. GEM Ports	Number is software dependent
No. TCONT/AllocID	Number is software dependent

Video Interface

Type	Not applicable, IP Video (Multicast or Unicast) over the Data Interface
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Data Interface

Type (wired)	Four 10/100Base-T RJ-45 Ethernet interfaces
Type (wireless)	One 802.11b/g/n, two antenna
Security	WEP, WPA-PSK, MAC address filtering
Rate & Duplex	Auto-negotiation
MDI/MDIX	Auto-sensing
VLAN Support	802.1Q with VLAN tag manipulation as well as Legacy Mode operation, VLAN Stacking (Q-inQ), VLAN Translation
MAC & VLAN	128/256 MAC Address and 16/32 VLAN IDs, 128 multicast groups and IGMP V2/V3 snooping, Broadcast/Multicast rate limiting, MAC address limiting
TablePriority	CoS based on VID, 802.1p, and IP ToS/DSCP, and IP VID=0 802.1p, ToS/DSCP to 802.1p mapping, 802.1p marking/remarking

Environmental

Temperature	0 to 45 °C
Humidity	5 to 90% (Non-condensing)
Jitter Buffer	Static or Dynamic

Gateway

Routing	L3 software configurable
Address Assignment	PPPoE, DHCP or Static
Address Translation	NAT/NAPT and STP firewall with ACL and ALG (application-level gateway)
Services	DHCP client and server, DNS, VPN (PPTP, L2TP, IPSec) Pass-through, Port forwarding

Physical

W x D x H	220 mm x 160 mm x 35 mm
Powering	External AC adapter with 12V / 1.0A connector
Mounting	Wall and table mounting

Compliance

EMC	EN55022, CISPR-22 Class B, ETSI 300 386, TEC SD/EMI-01/02 Sept. 2001
Safety	EN60950, UL60950, CE, Optical IEC-60825-1 Class B Laser safety per G.664
Laser Safety	IEC-60825-1 Class 1 laser safety per G.664, FDA 21 CFR 1040.10 & 1040.11 Class 1
Environmental	EN300019-1-3 Class 3.1E
Transient	EN/IEC61000-4-4 (2001) Level 2
Radiant RF Immunity	EN/IEC61000-4-3 (2002) level 2
Conducted Immunity	EN/IEC61000-4-6 (2001) level 2
Surge	EN/IEC61000-4-5 (2001) 0.5 KV (line) and 1.5 KV (earth)
ESD	EN/IEC61000-4-2 (2001) Contact level 2 & air discharge level 3

*Measured at BER better than 1×10^{-10} , factoring in aging and worst case PMD.

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