Alphion®

Product Brief

AOLT-4200 Series

8-port GPON mini-OLT

Feature Summary

- 19" standard rack mountable
- 8 GPON SFP Class B+/C+ ports, Two 10GE/1GE SFP+ ports and four 1GE SFP ports

Field proven GPON Technology

- Complies with ITU-T G.984.1-5 and G.988
- 2.5Gbps downstream & 1.25Gbps upstream
- Upto 1:128 optical splitting ration per port
- DBA (Dynamic Bandwidth Allocation) and QoS based on 1,024 T-CONTs per Port
- 128 bit AES Encryption and FEC

High performance Layer 2+ switching

- Complies with BBF TR-156 1:1, N:1,VBES (VLAN Business Ethernet Services) / TLS (Transparent LAN Services)
- Full throughput for all ports (non-blocking)
- High capacity packet switching (32K MAC table)
- IPv4 and IPv6 support
- Comprehensive VLAN and QoS support
- IGMP snooping/proxy for up to 1K multicast groups per port and 4K active multicast groups
- ARP & ARP Proxy

Flexible SNI networking

- Upto 2 x 10GE/1GE (SFP+) 802.3ae/z ports
- 4 x 1GE (SFP)(10/100/1000Mbps) 802.3u/z ports
- IEEE 802.1ad Provider Bridging
- IEEE 802.3ad Link Aggregation
- G.8032/Y.1344 ERPS v1/v2 Ethernet Ring Protection Switching

Carrier class operation & management

- Auto-discoverable and manageable by Alphion's AEMS management system for remote configuration, provisioning, monitoring, fault sectionalization and localization, data storage etc.
- FTP/TFTP for remote Software Upgrade
- Supports SNMPv1/v2c/v3, Telnet/SSHv1/v2
- Manages ONTs via G.984.4,G.988 OMCI

Security

- Layer 1 to 4 packet filtering (ACL)
- DHCP packet filtering and relaying
- MAC restriction per PON port
- Broadcast/multicast/DLF packet limit
- Port flooding guard for abnormal traffic

Alarm and Auxiliary Contacts

- Remote alarm inputs

Powering

- Single AC or Dual DC power inputs

AOLT4200 Dual DC input

AOLT4200 Single AC input

The AOLT-4200 series of GPON OLTs supports eight GPON OLT ports, two 10GE/1GE ports and four 1GE ports. They are 1RU high and mounted in standard 19" racks or wider racks using adapters. The compact design, low power consumption, 99.99 Percent High Availability, extended operating temperature range and alarm inputs facilitate remote deployment where rack space is limited and ambient environment is harsh.

Applications

The AOLT-4200 serves many markets such as Telecom, cable TV, Large institution campus and apartment complex networks, providing premium triple-play broadband access data, voice and video services. The high port density and energy efficiency allow service providers to save on both the equipment cost and the operation cost. At up to 128 optical splits, each AOLT-4200 supports up to 1024 ONTs/ONUs. Multiple AOLT-4200 units can be networked together to serve much larger number of subscribers over shared uplinks.

Standards

The AOLT-4200 design takes advantages of the latest switching technologies. The full compliance to BBF TR-156 facilitates the support of sophisticated network configurations. By complying with the FSAN/ITU-T GPON standards, the AOLT-4200 achieves interoperability with a wide range of GPON ONTs.

Flexible Management

The AOLT-4200 is managed with either Alphion Element Management System (AEMS) that supports auto-discovery of OLTs and ONUs/ONTs and provides configuration, profile based provisioning, event and fault management and performance monitoring via its Mulitple Privileged CLI or with a 3rd party NMS via its northbound interface

THIS PRODUCT BRIEF IS SUBJECT TO CHANGE AND IS PROVIDED ON AN "AS-IS" BASIS.

SPECIFICATIONS

GPON Interface

Ports:	8 SFP ports, G.984.2 compliant
Standard:	Fully ITU-T G.984.1-5 and G.988 compliant
Line rate:	Downstream: 2.488 Gbps; Upstream: 1.244 Gbps
Connector:	SFP Plug-in module; SC/UPC on SFP
Link Budget:	28 dB Class B+ or 32dB Class C+; ITU G.984.2 Amd1 depending on SFP installed; 1:128 split
Wavelength:	Transmit: 1310+/-20nm; Receive: 1490+/-10nm
Distance:	up to 60 km (subject to optical budget)
OLS/OTM:	ITU-T G.984.2Amd2 incl. Rx and Tx power
TC layer:	AES (128-bit key) and FEC RS (255,239)
DBA:	DBRu mode 0 and mode 1 per G.983.4
GEM port-IDs:	1K per PON port, Multicast GEM
T-CONT:	1-5, 4K per PON port, 8 queues per T-cont

Ethernet Uplink Trunking Interfaces*

10GE/1GE:	2x SFP+ ports; 802.3ae / 802.3z
1GE:	4 x SFP ports; 802.3 / 802.3u / 802.3z

Management Interfaces

Out-of-band:	1xRJ45 / SFP* MGT-A to DCN
In-Band:	1xRJ45 FE 802.3u MGT-B to LCT
Telnet/SSH:	1xUSB 2.0 for CLI via HyperTerminal
UPS:	1xUSB 2.0 for UPS monitoring & control

Switching

VLAN support:	BBF TR.156 compliant; 1:1, N:1, VBES/TLS;
VLAN Models:	VLAN per customer Model and VLAN per Service Model with VLAN Translation as required
Capacity:	160 Gbps Ethernet switching
Performance:	Full throughput non-blocking for all ports; 32K MACs; 4K VLANs; 4K multicast groups, Packet Forwarding Rate of 65Mpps. Latency of 1G <10 micro seconds
Spanning Tree:	STP (802.1d), RSTP (802.1w)
VLAN Mapping:	untagged, priority tagged, port based, 802.1q single tagged, 802.1ad (Q-in-Q) double tagged
Multicast:	IGMPv2 (RFC2236), IGMPv3 (RFC3376) &MLDv2 (RFC3810) snooping &proxy; RFC2933 IGMP MIB
Forwarding:	IPv4, IPv6,MAC-forced (RFC4562), IGMP >2000pps
Mirroring:	SNI and PON port mirroring
OAM:	Port Stats, PMs for Access & Network Ports, BER of 10 e -9

Security

DHCPv4/6:	DHCP (RFC2131/3315) snooping, filtering. relay
DHCP Options:	Option 18/37/43/60/82 (RFC2132, RFC3046)
PPPoE:	PPPoE intermediate agent
Binding:	Port, MAC
Protection:	MAC Restriction per port, Broadcast / Multicast / DLF packet limit, IP anti-spoofing, MAC spoofing prevention, IP Source guard,
PON:	AES, Rogue ONT ONU/ONT detection, isolation and mitigation, SN, Password. SN+Password Authentication
ACLs:	Layer 1~4 Packet Filtering (ACL), QoS Policing (IPv4 & IPv6). CLI Access Control

Protection

SNI:	802.3ad Link Aggregation, G.803 ERPSv1/v2
GPON:	G.984.1 Type B and C supported

Quality of Service

Classification:	8 priority queues per GEM port, 802.1p TCI, 802.1q CoS, per port IP ToS/DSCP to 802.1p mapping/re-marking, Upstream Policing,
Congestion:	Back pressure (802.3x Flow Control)
Scheduling:	SP, WRR, SrTcm and TrTcm, 64kbps granularity, Egress Traffic Shaping

Management

Local:	CLI via USB with multiple Privileges, LCT via MGT-B
Remote:	AEMS, SNMP v1/v2c/3, Telnet, SSH
ONT/ONUs:	Managed over OMCI, VEIP and TR-069
Authentication:	Radius, TACACS+ management access authentication
Monitoring:	RMON, Temperature, Humidity, Fan speed, CPU
Alarms:	Critical/ Major/Minor Severity; Alarm &Event logging, Local Alarm Storage, Syslog Logging
Time Sync:	NTPv4 (RFC5905)

Timing and Synchronization

SyncE EEC:	G.8261,G8262/Y.1362 EEC option 1, 2)
PTP:	IEEE1588v2 per G.984.3Amd2 (2008) with support for 10MHz, 1pps and ToD
Intl. Oscillator:	Stratum 3/3E TCXO/OCXO**

Power

AC option:	Single/Dual, 94VAC to 250VAC, 50/60Hz
DC option:	Dual, -36VDC to -72VDC
Power:	70 to 80 Watts Nominal

Physical

Operating Temp:	0°C to 65 °C
Storage Temp:	-40 °C to 65 °C
Humidity (N.C.):	5% to 95% RH
Access:	Front-access, no connectors on rear of unit
Rack:	19 inch ANSI/ETSI standard rack
Dimensions:	430mm (W) x 290 to 350mm (D) x 44 to 88mm (H)
Weight:	<6kg fully equipped
LED Indicators:	Refer to User's guide
Alarm Contacts:	Isolated dry contacts
Reset Button:	Recessed push button on front
Cooling:	Forced Air Fan Cooling, Plug-in Module with washable air filter
Atmosphere:	ASTM D4332-01 (2006) (Preferred)
Acoustic noise:	≤58.5dBA

Regulatory Compliance

Certification:	CE (Conformité Européenne) compliant
EMC Emissions:	EN55022, CISPR-22 Class B
EMC Immunity:	Radiated RF: EN/IEC61000-4-3(2002) level 2 Conducted RF: EN/IEC61000-4-6(2001) level 2
MF Immunity:	EN61000-4-8 (2010)
Safety:	CE, EN/IEC60950-1/UL60950, UL2043-ready
Laser safety:	IEC60825-1 Class 1 laser safety per G.664
ESD:	EN/IEC61000-4-2(2001) contact level 2, air discharge level 3
Transient:	EN/IEC61000-4-4(2001) level 2
Surge:	EN/IEC61000-4-5(2001) 0.5 KV (line), 1.5 KV (earth)
Voltage Dips:	EN61000-4-11(2004)
Environment:	EN300019-1-3, QM-333 B2 Category (-5 °C to 50 °C; 50% RH) and QM-333 D Category (-10 °C to 60°C; 50% RH) when in an Outdoor Cabinet
Altitude, Pressure:	GR-63-CORE, IEC 60068-2-13
Drop Test:	GR-63-CORE, IEC 60068-2-31, IEC 60068-2-32
Mechanical:	EN300119-4
Energy:	Broadband Equipment Code of Conduct (2008)
Hazardous	RoHS6, WEEE

** Contact Alphion

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