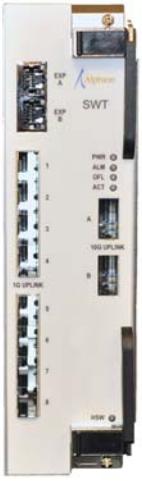
Alphion®

Product Brief

AOLT-4000-SWT



GPON Switch and Timing Card

Feature Summary

- Hot swappable, with 1+1 master and slave redundancy option
- 28 Gb/s (2 x 10-GbE and 8x1-GbE) uplink, and 10-GbE backplane interface to each line card
- Line-rate unicast packet forwarding and multicast replication
- Independent VLAN Learning (IVL)
- 16K MAC addresses, 4094 VLANs
- Port based VLAN, IEEE 802.1ad, Q-in-Q VLAN stacking
- Eight priority queues per port
- Priority re-marking, DSCP to 802.1p mapping
- Sophisticated packet filtering based on any Layer 2-7 field
- Rate control of broadcast, unknown unicast, and multicast packets
- IEEE 802.3ad link aggregation across uplink Ethernet links
- IEEE 802.1w RSTP
- IGMP snooping/proxy
- 1024 Layer 2 multicast groups
- DHCP Option 82
- Support for Jumbo frames (up to 12Kbytes)
- Network for Local TDM timing synchronization

Applications

As a key card of the AOLT-4000 platform, AOLT-4000-SWT enables efficient and controlled forwarding of Ethernet/packet traffic between the GPON lines cards and the uplink service/edge node (typically, a router or a switch).

Robust Layer-2 Switching

AOLT-4000-SWT contains a high-capacity switching engine that supports hardware based learning of up to 16K MAC addresses, 4094 VLANs, and Independent VLAN Learning (IVL) based forwarding. It also supports MAC, protocol and subnet based VLANs; IEEE 802.1ad/Q-in-Q VLAN stacking; and IEEE 802.3ad link aggregation. Featuring an aggregate switching capacity of 200 Gb/s, the AOLT-4000-SWT supports line-rate forwarding of unicast and multicast packets, for all packet sizes, under all conditions.

Packet Filtering/Classification

AOLT-4000-SWT includes a flexible packet filter/classifier that can filter packets based on any Layer 2-7 field, including MAC address, IP address, VLAN ID, packet type, etc, supporting multiple lookups and actions per packet. Filter actions include dropping, priority re-marking, rate limiting, etc. The AOLT-4000-SWT card also supports access control list (ACL) based policing; flow metering, with a granularity of 64 kb/s to 1 Gb/s; two rate three color marking (trTCM); and class-based marking for SLAs.

Intelligent QoS

AOLT-4000-SWT supports 8 priority queues per port, head of line blocking (HOLB) prevention, service aware flow control, bandwidth guarantee per class of service and/or per port, DSCP re-marking, DSCP to 802.1p mapping, and 2-levels of drop precedence per queue. It features a packet scheduler that supports multiple scheduling algorithms, including strict priority (SP), weighted round robin (WRR), and deficit round robin (DRR). The AOLT-4000-SWT also supports individual rate limiting of broadcast, unknown unicast, and multicast traffic on a per port basis.

High Availability

AOLT-4000-SWT supports 1+1 redundancy, protecting the AOLT-4000 platform's data plane and TDM synchronization clocks from a single card failure.

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