PAS5001
Gigabit Ethernet SOC for PON, CO and OLT Applications

Released
Product Brief

GENERAL DESCRIPTION

The PAS5001 is a Gigabit Ethernet Optical Line Terminal (OLT) system on a chip dedicated for use in an Ethernet Passive Optical Network (IEEE 802.3ah EPON). The PAS5001 chip integrates the Ethernet Media Access Control (MAC) functionality, EPON protocol management, an advanced networking engine and an embedded CPU. An integrated software package provides a complete OLT solution.
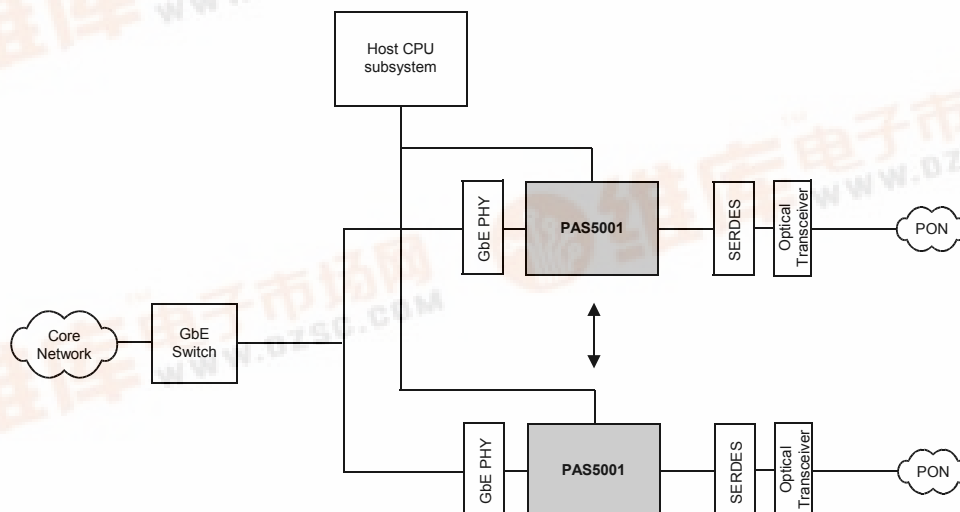
PRODUCT BENEFITS

- Full IEEE 802.3ah EPON OLT functionality with integrated ARM9 CPU and comprehensive software package
- Advanced classification engine with support for VLANs, video services with IP Multicast, IPv4 or IPv6
- Comprehensive OLT software development package with complete set of device drivers
- Integrated encryption engine enhances security and privacy
- Embedded frame buffers with multiple priority queues
- Run-time programmable dynamic bandwidth allocation (DBA) hardware engines
- On chip controller performs complete link management and OAM of EPON link with up to 127 ONUs

INTERFACES

- Full duplex transmit and receive EPON port operating at 1.25Gbit/s for connectivity with EPON SERDES devices over TBI
- Flexible optical transceiver control interface for support of devices from multiple vendors
- Full-duplex Gigabit Ethernet GMII and TBI interface to core network switch ICs or PHY devices
- Flexible host interface with multiple modes for connectivity to the core network controller
- 32-bit CPU memory extension interface for advanced embedded applications
- Serial EEPROM interface for boot and configuration parameters
- LED indications for the PON, core network and host interfaces
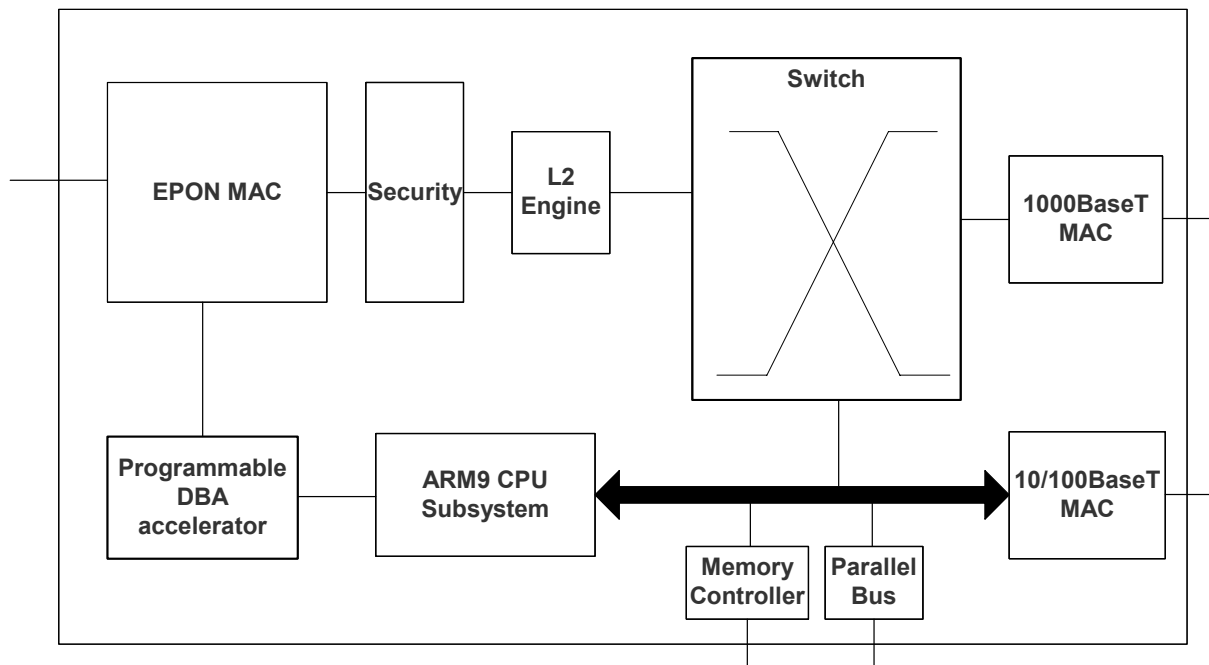- 4 general-purpose I/O interface

OLT EXAMPLE

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FEATURES

- Gigabit Ethernet PON OLT based on 802.3ah standard
- Programmable interface logic for optical transceiver
- Integrated ARM9 CPU subsystem
- Complete integrated hardware and software solution for PON network control and real-time management
- Complete OLT driver software package development platform Supports automatic operation and OEM extensions
- Support for buffer threshold reporting for compatibility with dynamic threshold control

- Programmable dynamic bandwidth allocation (DBA) hardware engines
  - Algorithms downloadable in runtime
  - Multiple algorithms available
- 8 priority queues with multiprotocol classifier including:
  - IEEE802.1q VLAN manipulation and QOS support
  - IEEE802.1p priority, IPv6 priority, IPv4 COS
  - IGMP
- Full OAM feature set termination according to 802.3ah
- 128 bit AES encryption – downstream and upstream
- IEEE802.1x Authenticator with remote administration
- IEEE802.3x flow control for core network interface
- Dedicated management interface to core network controller
- Configurable traffic rate limiting

BLOCK DIAGRAM

FURTHER RESOURCES

www.pmc-sierra.com/passave/

www.pmc-sierra.com/ftth-pon/

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