

Quad GPON Optical Line Terminal (OLT) Controller

BroadLight's BL3458 is a highly integrated controller for four (4) GPON OLTs links. Along with *PONmaker* software, designers can realize quick and low-risk time to market for high density ITU-T G.984.3 compliant OLT equipment. The BL3458 enables the downstream and upstream GPON link to be fully utilized with packet and TDM data over GPON Encapsulation Mode (GEM). The BL3458 GPON MAC function is based on the widely used industry and interoperable proven BL3238 OLT MAC. However, the BL3458 is just not simply four separate GPON MACs. Its embedded CPU runs *PONmaker* for the operation of each individual PON link while controlling and managing the chip's resources. This greatly offloads the OLT's host processor function and ultimately software development. Dynamic and Constant Bandwidth Allocation (DBA and CBA) are part of the chip's hardware features under the control of the embedded CPU. Seamless interconnectivity with optical transceivers, Ethernet switches or Network Processors and DDR2 memory significantly reduces complexity, power and cost making high density OLT designs possible.

Main Features

- Quad (4) GPON OLT G.984.3 MACs
 - Ethernet over GEM
 - TDM up to 155 Mbps over GEM
 - Downstream FEC and AES
 - Upstream FEC
 - CBA/DBA engine
 - 128 ONTs per PON
 - 1024 Alloc_IDs per PON
 - 4096 Port_IDs per PON
- 1W per OLT, 4W total
- Embedded SerDes and BCDR
- Embedded MIPS32 4KEc controller
- Flexible Ethernet/GPON interworking
- Seamless 2.5 Gbps network interfaces
- Seamless SFF/SFP optical transceiver interface
- In-band and out-of-band OAM&P support
 - TR-101
 - OMCI
- PON-aware QoS features
 - Priority queues
 - Priority discard and flow control

Optical Interface

- Internal BCDR and SerDes
 - 2488 Mbps downstream
 - 1244 Mbps upstream
- Transceiver diagnostics and management

Packet Interfaces

- Gigabit Ethernet
 - 4x 2.5 Gbps SGMII
 - Configurable enable/disable MDIO interface

GEM Interface

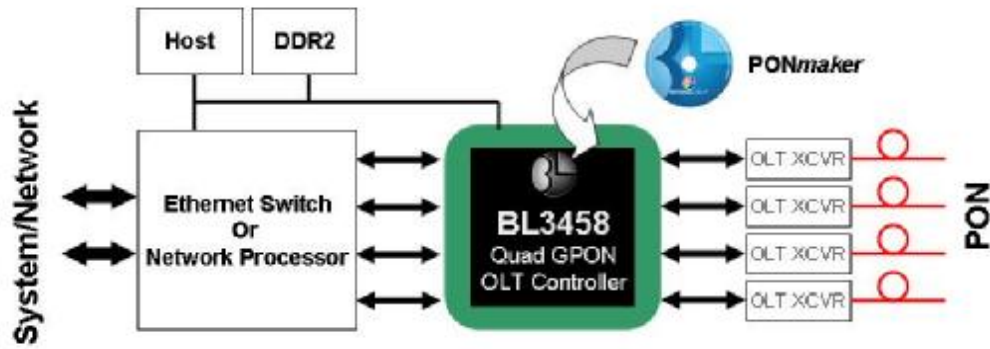
- 155 Mbps clear channel TDM

Memory Interface

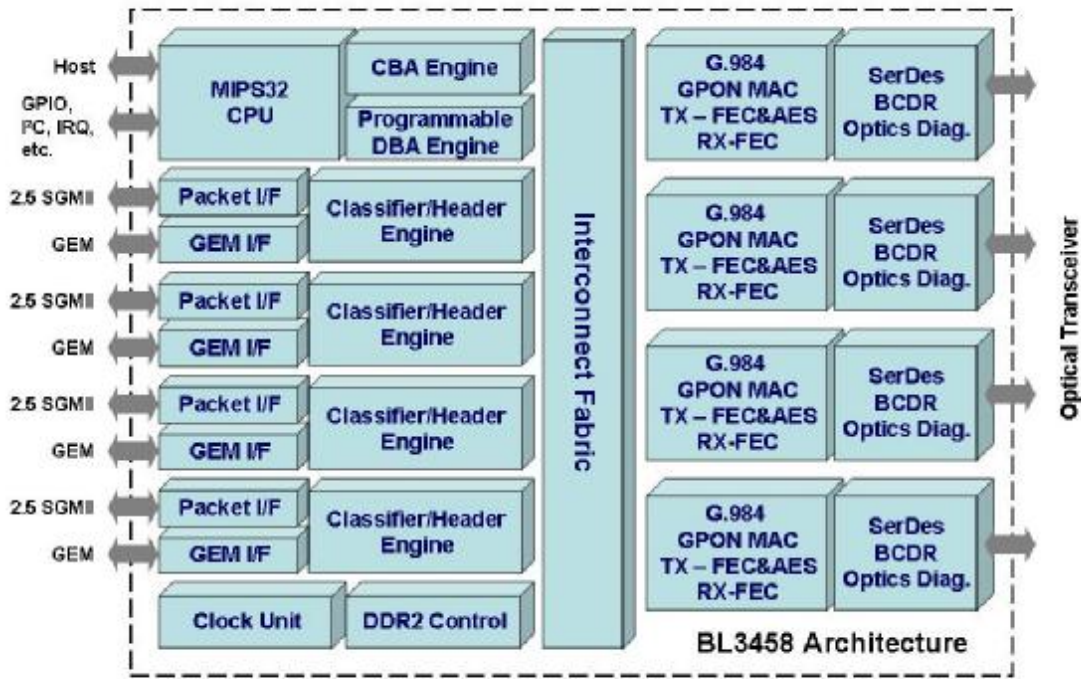
- Embedded 200MHz DDR2 controller
- Glueless interface to standard DDR2

Physical

- 35x35mm TEBGA-768
- 1.2V, 1.8V, 2.5V
- 4W Typical
- -40°C to +85°C



The BL3458's high level of integration, seamless optic and system interfaces along with low power consumption enables low part count quad (4) port OLT implementations as shown above.



The BL3458 Development System is an ITU-T G.984.3 compliant Octal (8) port OLT supporting 2 10GbE interfaces designed to allow software development with performance evaluation.

GPON OLT Solution ordering information:

- BL3458 Quad GPON OLT Controller – BL3458
- BL3458 PONmaker Software
- BL3458 Development System

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