

BL3238 Product Brief

GPON Optical Line Terminal (OLT) Media Access Control (MAC)

BroadLight's BL3000 is a complete GPON OLT MAC on a single FPGA device. Along with *PONmaker-G* Software, designers can realize quick and low-risk time to market for ITU-T G.984.3 compliant OLT equipment. The BL3000 allows the 2488 Mbps downstream PON link to be fully utilized with packet or TDM data over GEM.

Main Features

- Single GPON OLT G.984.3 MAC supporting Ethernet over GEM and TDM over GEM
- 2488 Mbps downstream
- 1244/622 Mbps upstream
- Ranging and activation process support
- Configurable downstream and upstream FEC
- Configurable downstream AES encryption and key exchange process
- Flexible upstream bandwidth scheduler
 - Static bandwidth allocation
 - Dynamic bandwidth allocation
- Packet to GPON port-ID mapper
- Support of 128 ONTs
- Programmable up and downstream and upstream VLAN tagging and stripping
- Dedicated PLOAM and OMCI FIFO queues

Optical Interface

- Internal BCDR/SerDes

- Differential interface to external BCDR support

Packet Interfaces

- Gigabit Ethernet PHY
 - 3 SGMII PHY
 - Configurable enable/disable MDIO interface
- Support of 2KByte MTU

GEM Interface

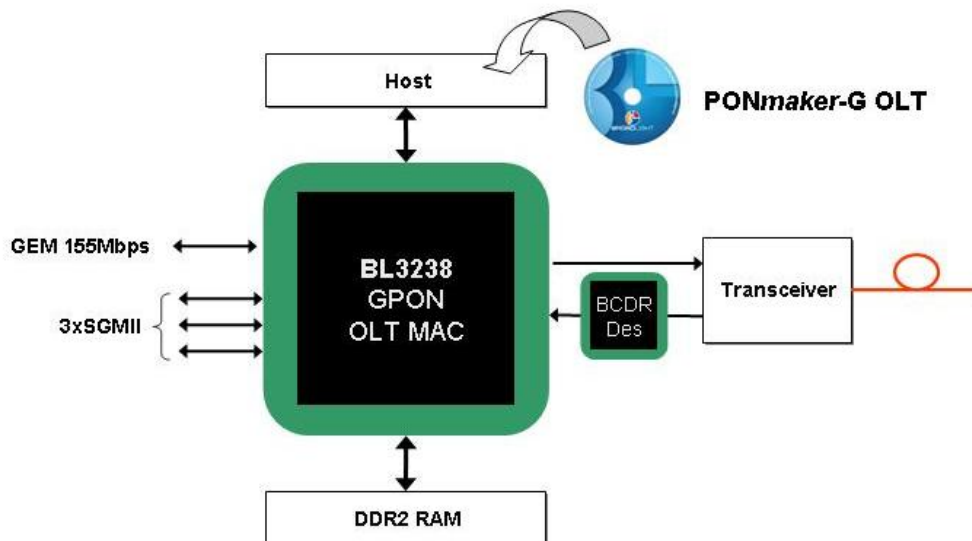
- Support of 155Mbps full duplex TDM traffic for TDM over GEM

CPU Interface

- Glueless memory mapped device

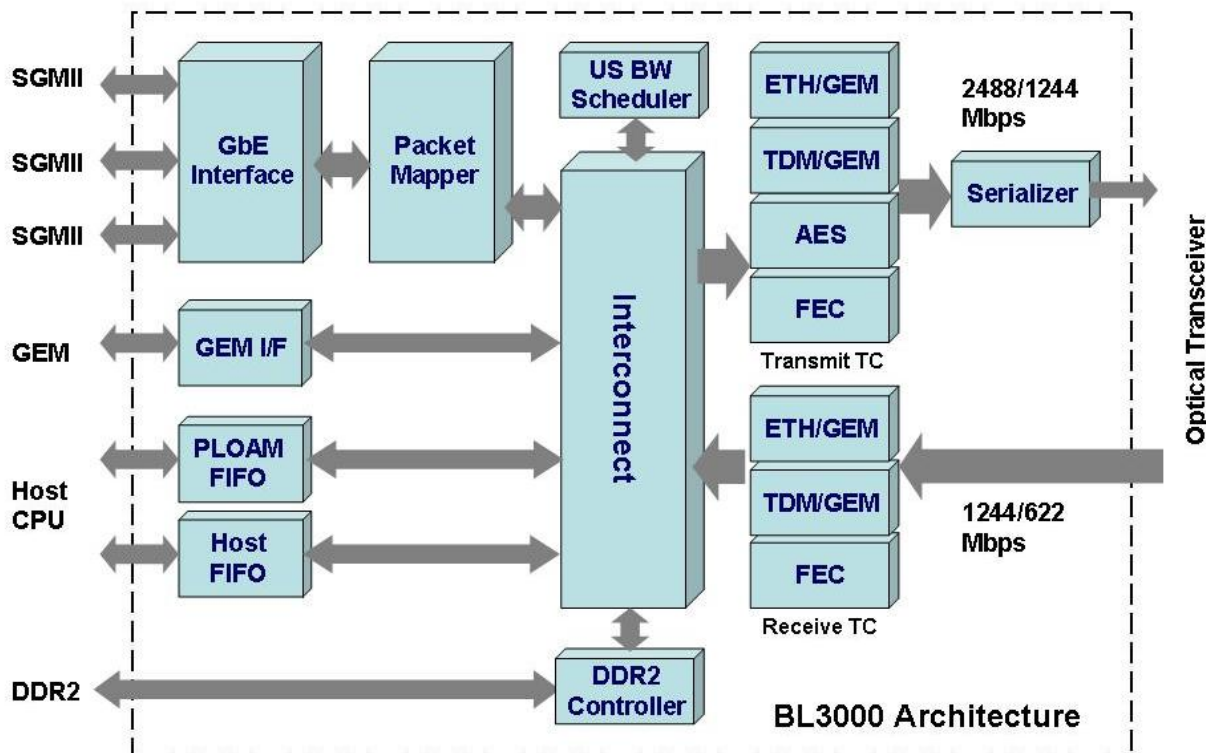
Memory Interface

- Embedded 200MHz DDR2 controller
- Glueless interface to industry standard Double Data Rate-2 DRAM



The BL3000 hardware architecture is implemented on a Xilinx Virtex 4 FPGA and provides all key functions for a complete GPON OLT compliant with ITU-T G.984.3. The GbE interface and packet mapper provides the packet service flow to completely fill the 2488/1244 Mbps downstream/upstream link with data to 4096 port-IDs and 128 ONUs. The GEM interface provides a clear channel transport of 155 Mbps through the PON providing equipment suppliers flexibility on implementing TDM services. Upstream packet and TDM data are reassembled in the external DDR2 SDRAM.

BroadLight's BL3000 Evaluation System is an ITU-T G.984.3 compliant OLT supporting GbE and clear channel 155 Mbps data. The modular design allows engineers to develop multiple interfaces and applications on a single platform.



GPON OLT Solution ordering information:

- BL3238 Single GPON OLT MAC w/ SGMII - 2488 Mbps DS, 1244/622 Mbps US
- BL3000 PONmaker-G Software – BL4310
- BL3000 Evaluation System – BB1030

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