BL2345 Product Brief

GPON

Optical Network Termination / Residential Gateway SoC

The powerful BL2345 ONT System on Chip (SoC) is designed to meet the performance requirements of high-performance GPON connected Optical Network Termination and Residential Gateway devices. BroadLight's dual core RunR network processor architecture implemented in the BL2345 provides 2.5 Gbps downstream and 1.25 Gbps upstream packet throughput performance for Ethernet bridging operations and symmetrical 1 Gbps performance throughput for layer 3 and 4 operations. Through its Peripheral Bus Interface (PBI), external VoIP DSP and SLIC devices can be added to support dozens of POTS lines. The BL2345 offers flexible data port configuration options from 2 gigabit Ethernet (GbE) ports to 1 GbE with 4 switched fast Ethernet (FE) ports and connectivity for Universal Serial Bus (USB) and 802.11 wireless devices through its Peripheral Component Interface (PCI) bus. Its embedded field proven GPON MAC is industry proven with ITU-T G.984 compliant Optical Line Terminals (OLTs). BroadLight's ONT solution includes the PON*maker* software package running on the powerful 450 MHz MIPS32 CPU which allows developers to implement ITU-T G.984 compliant GPON ONT products quickly and with low-risk while Gate*maker* software turns on the BL2345's Residential Gateway features. The BL2345's performance and flexible data port and voice services capabilities makes the BL2345 ideal for Multi-Dwelling/Tenant Unit (MDU/MTU) as well as Single Family Unit (SFU) ONT applications.

Main Features

- Single chip solution for SFU, MDU and MTU ONTs
- Single chip solution for GPON RG
- ITU-T G.984 interoperability proven GPON MAC
- Embedded MIPS32 24K controller
- PBI interfaces for VoIP DSPs
- PCI interfaces for USB and WiFi
- Single 19.44MHz XTAL input with 8 KHz output
- Only one DDR2 memory chip required
- Gate*maker* software for RG solutions
- PON*maker* software for ONT solutions

Dual Core RunR Packet Engine

- Cost optimized for CPE network processor
- Microcoded classification engine with hardware accelerators supporting bridging, queuing, scheduling, policing and traffic shaping
- Layer 3 & 4 accelerators for 1Gbps throughput
- Performance for NAT, VPN, Firewall, security, routing, DES, 3DES, AES encryption for IPSec

CPU

- 450 MHz MIPS32 24K RISC core with MMU
- 4-way, 16KB instruction and 16Kb data cache
- 32 GPIO, UART, SPI, I²C, PBI

Ethernet Interfaces

- 4x SMII +1x GMII MAC (IEEE 802.3ab/802.3z)

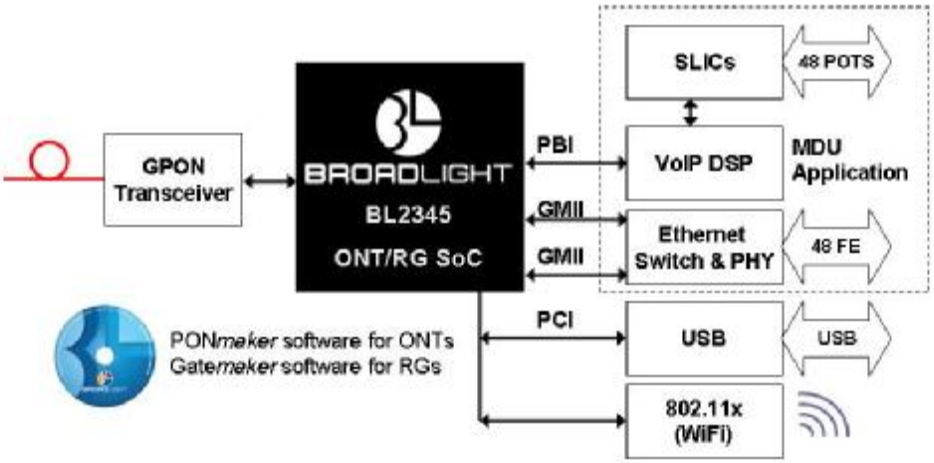
  or
- 2x GMII (IEEE 802.3ab/802.3z)
- Configurable IEEE 802.3x flow control
- Configurable MDIO interface
- Programmable watermarks and automatic generation of pause frames
- 802.3q VLAN tagging, mapping, Q-in-Q stacking
- Statistic counters for OMCI and RMON
- Loopbacks
- 802.1ag Connection Fault Management (CFM)

PCI

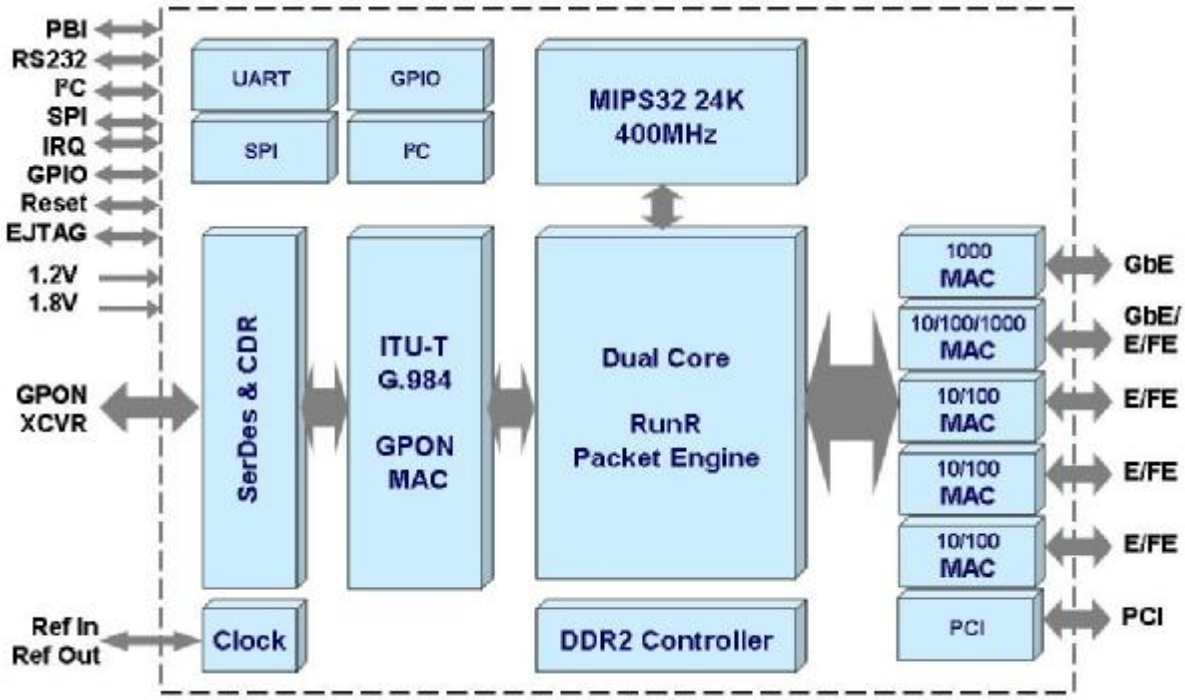
- 33 MHz, Rev 2.3 PCI compliant
- Power management spec rev 1.1
- Master and target modes

Physical

- 19x19mm PBGA-441
- 1.2V, 1.8V, 3.3V I/O
- 1.2W Typical
- -40°C to +85°C



The BL2345's high level of integration and flexibility enables low part count SFU, MDU/MTU ONT and RG implementations.



GPON ONT/RG SoC Solution ordering information:

- BL2345 GPON ONT/RG SoC – BL2345
- BL2345 Gate*maker* Software
- BL2345 PON*maker* Software
- BL2345/8 Development System

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