



# BL2348 Product Brief

## GPON

### Optical Network Termination / Residential Gateway SoC with VoIP

The highly integrated BL2348 ONT/RG System on Chip (SoC) is designed to meet the performance, QoS, security, management and service requirements of high-performance GPON connected Optical Network Terminations and Residential Gateways. With fiber connected CPE, services requirements with QoS exceed 100 Mbps. BroadLight's dual core RunR network processor architecture implemented in the BL2348 ensures symmetrical 1 Gbps performance throughput for layer 2, 3 and 4 operations. The BL2348 integrates a VoIP DSP with a PCM interface for connection to Subscriber Interface Circuits (SLICS) support up to 4 POTS. The BL2348 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 has achieved interoperability with ITU-T G.984 compliant Optical Line Terminals (OLTs). BroadLight's RG solution includes the *Gatemaker* software package running on the powerful 450 MHz MIPS32 CPU which allows developers to implement GPON RG products quickly and with low-risk. The BL2348 with *PONmaker* software forms an ITU-T G.984 compliant ONT solution.

#### Main Features

- Single chip solution for GPON residential gateway
- Single chip solution for SFU ONT with voice
- Embedded VoIP DSP
- ITU-T G.984 interoperability proven GPON MAC
- Embedded MIPS32 24K controller
- PCM interfaces for SLICS
- PCI interfaces for USB and WiFi
- Single 19.44MHz XTAL input with 8 KHz output
- Only one DDR2 memory chip required
- *Gatemaker* software for RG solutions
- *PONmaker* 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

#### VoIP DSP

- Up to 4 voice ports, 3-way conferencing
- G.711, G.722, G.723.1, G.726, G.729A/AB coding
- G.168 echo cancellation (32 mS tail)
- T.38 fax relay
- Tone and comfort noise generator
- Voice activity detection

#### CPU

- 450 MHz MIPS32 24K RISC core with MMU
- 4-way, 16KB instruction and 16Kb data cache
- 32 GPIO, UART, SPI, I<sup>2</sup>C, PBI

#### Ethernet Interfaces

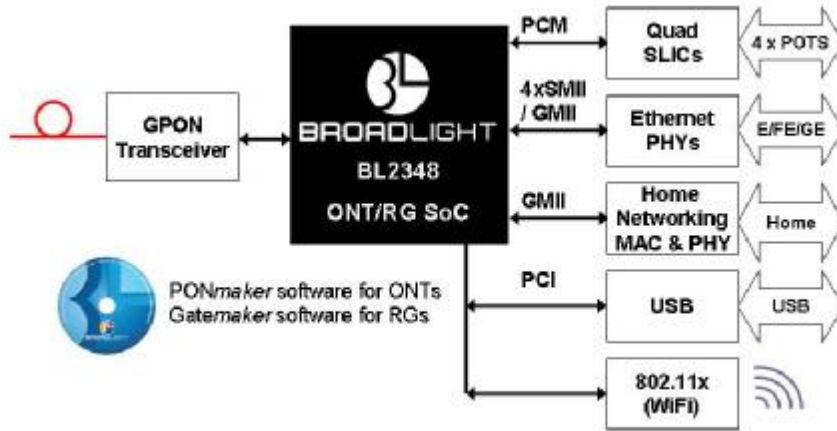
- 4x SMII + 1x GMII MAC (IEEE 802.3ab/802.3z)  
or
- 2x GMII (IEEE 802.3ab/802.3z)
- Configurable IEEE 802.3x flow control
- Configurable MDIO interface
- Programmable watermarks and automatic generation of pause frames
- 802.3q VLAN tagging, mapping, Q-in-Q stacking
- Statistic counters for OMCI and RMON
- Loopbacks
- 802.1ag Connection Fault Management (CFM)

#### PCI

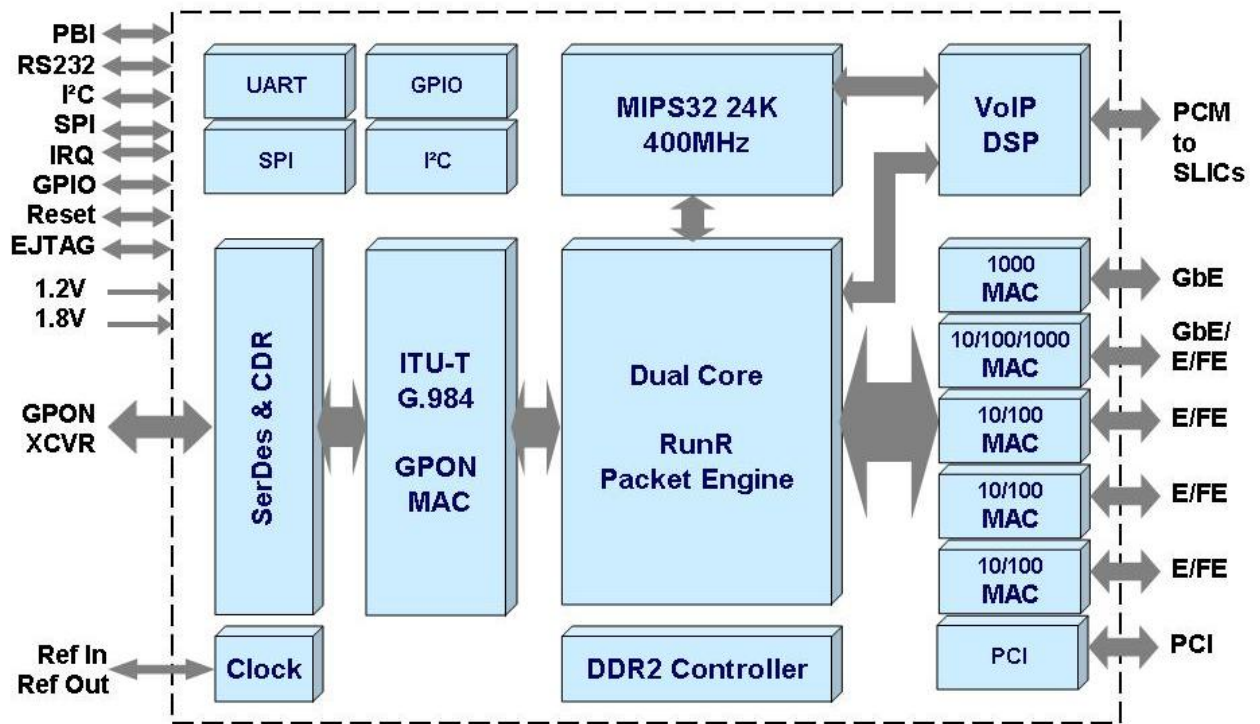
- 33 MHz, Rev 2.3 PCI compliant
- Power management spec rev 1.1
- Master and target modes

#### Physical

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



The BL2348's high level of integration, seamless optic and home networking interfaces along with low power consumption enables low part count RG and ONT implementations as shown above.



**GPON ONT/RG SoC Solution ordering information:**

- BL2348 GPON ONT/RG SoC – BL2348
- BL2348 Gatemaker Software
- BL2348 PONmaker Software
- BL2345/8 Development System

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