

Flexible, scalable, and ready for deployment

GPON solutions from Altera

More than ever, your gigabit passive optical network (GPON) applications need to overachieve—supporting higher data rates, using less power, and integrating more functions on a line card. With FPGAs, you gain a flexible, scalable platform meeting the challenges of creating a variety of GPON applications and functions.

GPON OLT line card requirements

Technical requirements	Business requirements
<ul style="list-style-type: none"> • Packet processing - Interworking • OLT MAC - 1.25/2.5G GPON • Traffic management - Proprietary techniques • Backplane interface - Non-standard backplanes - Backwards compatibility - Gigabit Ethernet • Chip-to-chip interconnect - Bridging - Serial protocols 	<ul style="list-style-type: none"> • Support evolving requirements • Meet aggressive cost/power budgets • Reduce total cost of ownership • Accelerate time to market • Deliver scalable architecture • Develop competitive differentiation • Manage risk

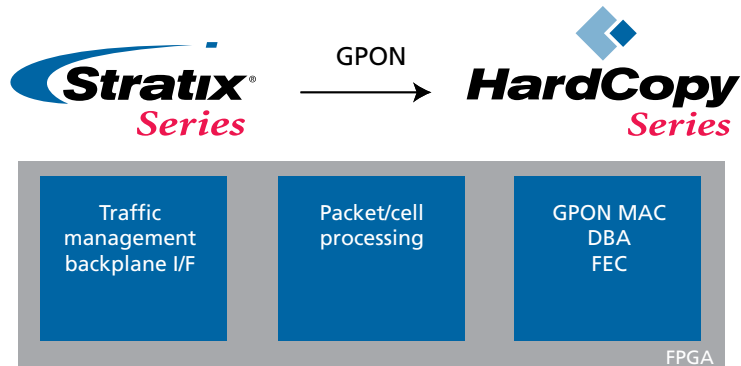
Applications

- Optical line termination (OLT)
- Optical network termination (ONT)
- Multi-dwelling unit (MDU)
- Multi-service access equipment

Functions

- 2G to 20 Gbps packet processing
- 1G, 2.5G, and 10G Ethernet media access control (MAC)
- 2G to 20 Gbps traffic aggregation and management
- Flexible data rate Ethernet in backplane, supporting standards including Gigabit Ethernet, XAUI, and Interlaken

GPON OLT platforms



*MSAN leaders choose Altera:
Five of the top eight GPON
OLT platforms use Altera®
technology.*

Prototype your design in an Altera Stratix® series FPGA. When you're ready for volume production, migrate your design to an Altera HardCopy® series structured ASIC. Through this seamless prototype-to-production design flow, you gain an architecture offering low cost, high performance, and low power.

For greater time and cost savings, take advantage of the extensive portfolio of intellectual property (IP) resources that we offer with our ecosystem partners. We team with our ecosystem partners to provide what you need, whether you want building blocks or a custom solution.

Altera and partner offerings for your GPON application

GPON application	Develop in-house	Buy off-the-shelf
OLT MAC	<ul style="list-style-type: none"> • Stratix II GX FPGAs • HardCopy II structured ASICs 	<ul style="list-style-type: none"> • GPON OLT MAC from our partners
ONT MAC		<ul style="list-style-type: none"> • ONT MAC from our partners
Ethernet MAC	<ul style="list-style-type: none"> • 10/100/1000 MAC and 10-Gbit MAC cores from MoreThanIP 	
Traffic aggregation and management	From Altera: <ul style="list-style-type: none"> • 10-Gbps traffic management reference design • 10-Gbps RDRAMII packet memory controller reference design • Two-level scheduler reference design • Hardware validation platform 	From Sarance Technologies: <ul style="list-style-type: none"> • 5-Gbps NPU • 10-Gbps classification and 10-Gbps search IP cores • Five-level hierarchical scheduler • 10G DDR2 packet memory controller
20 Gbps packet processing	Packet processing modules and framework from Altera, including: <ul style="list-style-type: none"> • Stratix series FPGAs • Cyclone series FPGAs • Nios® II embedded processors 	From Ethernity Networks: <ul style="list-style-type: none"> • ENET3000 FPGA access flow processor

Want to dig deeper?

If you have wireline system design questions or ideas to share, please contact your local Altera FAE or sales representative, or visit www.altera.com/wireline.

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