

Low-cost building blocks and custom options

DSL solutions from Altera

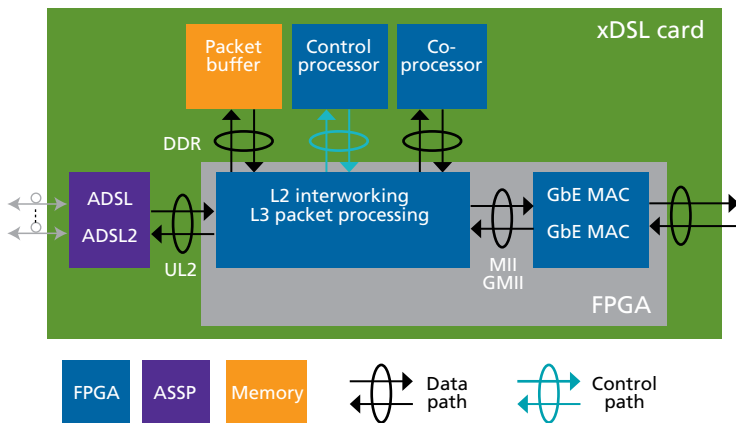
To be competitive in a climate of evolving system architectures, regional requirements, and scrutinized R&D budgets, your DSL platforms must be easy and cost-efficient to develop. Offering high-quality triple-play services means you need to have high bandwidth, multiple protocol support, and stringent traffic management.

Altera and our partners offer a portfolio of programmable solutions and software tools that help you create differentiated solutions while meeting your budget, time to market, and technical criteria. Whether you need a building block or a custom solution, we have a design option for you.

Simplifying the design process

DSL application	Altera solution	Partner solution
Packet processing	<ul style="list-style-type: none"> • Modules and framework • Classification, search, content addressable memory (CAM) replacement • Traffic policing IP cores 	<ul style="list-style-type: none"> • Network processing unit (NPU) solution from Ethernity Networks
Channel bonding		<ul style="list-style-type: none"> • Custom-built solution from AimCom
Ethernet media access control (MAC)	<ul style="list-style-type: none"> • 10/100/1000 Ethernet MAC that can be implemented on a Stratix® series, Arria® series, or Cyclone® series FPGA 	<ul style="list-style-type: none"> • 10 Gigabit Ethernet MAC • 10 Gigabit Ethernet Physical Coding Sublayer (PCS) • Ethernet Layer 2 Switch from MorethanIP
Traffic aggregation and management	<ul style="list-style-type: none"> • 10G traffic management reference design for Stratix II FPGAs 	<ul style="list-style-type: none"> • Custom-built solution from Sarance Technologies

Sample DSL card application



With multi-service access network (MSAN), you can support multiple access technologies from a single FPGA-based architecture. Such an approach can help you accelerate time to market, meet aggressive cost and power budgets, and support evolving system requirements. The DSL card application diagram on the left provides an example of an MSAN application developed with a FPGA.

Robust, scalable, and budget friendly

With our cost-effective, scalable silicon offering—and their reprogrammability to support a variety of interface schemes—we provide a flexible, cost-optimized architecture. Our Cyclone series FPGAs pave a fast path to high-volume applications. For integrated Gigabit Ethernet to drive backplanes on the DSL card, look to our Arria series FPGA family. Alternatively, with our Stratix series FPGAs, you can prototype and then migrate your design seamlessly to our HardCopy® ASICs for volume production. Regardless of the device used, Altera's Quartus® II design software delivers the performance and productivity needed for a faster and simpler design process than provided by traditional FPGA design flows.

To complement our programmable devices, we provide an array of packet processing technologies, as well as intellectual property (IP) cores that can be reused across multiple designs.

These cores include:

- Gigabit Ethernet MAC
- System packet interface (SPI) 3 and 4.2
- Interlaken
- DDR memory controllers

With the Altera® IP portfolio and our sustained roadmap of silicon, you don't have to worry about end-of-life or obsolescence issues. This platform-based approach lets you adapt and support new networking or protocol requirements without having to go through a learning curve for every design generation.

Leaders choose Altera

Altera programmable solutions are proven in high-density line cards. Currently, four of the top five IP-DSLAM line cards use Altera technology. Five of the top eight gigabit passive optical network (GPON) optical line terminal (OLT) platforms use Altera technology.

Want to dig deeper?

If you have DSL application 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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