



Xilinx EasyPath Solutions. FPGAs Below Structured ASIC Prices.

Developing high-volume applications demands exceptional flexibility and performance, as well as reduced risk and total costs.

While ASICs offer low unit costs, they are risky, require high NRE and development costs, and are very inflexible.

Xilinx EasyPath FPGAs deliver a conversion-free, flexible alternative to ASICs at prices below Structured ASICs. These FPGAs are optimized for high volumes, tested for a single or dual application, and guaranteed to be identical in functionality and timing to the Xilinx FPGAs used for prototyping. This methodology eliminates the risks of design conversion and the hidden costs associated with ASIC and Structured ASIC conversions.

Xilinx also offers the industry's most comprehensive selection of platforms, a conversion-free methodology, #1 rated design tools, the widest IP portfolio, and the industry's fastest times to production—only eight weeks. This makes EasyPath FPGAs the superior solution for volume production.



Lowest-cost solution

FPGA Advantages at a Lower Cost than Structured ASICs

Xilinx EasyPath solutions deliver the performance, value, and time savings you need to optimize your high-volume applications.

Lowest Total-Cost Solution at Prices Below Structured ASICs

- Industry's lowest NRE—\$75K
- No hidden costs of conversion or additional investment required

Most Comprehensive Selection of Platforms

- Six feature-rich platforms—Virtex-4™ LX, SX, FX, Spartan-3,™ Virtex-II,™ and Virtex-II Pro™
- 28 devices with device densities ranging from 20K to 200K logic cells

Industry's Most Flexible Solution

- Freedom to change Logic and I/O functionality in-system
- Support for two designs—system diagnostics and customer applications

Widest Selection of IP and Tools at the Lowest Cost

- Hard IP—at no additional cost from the FPGA
- 600+ proven soft-IP cores from 42 vendors with no extra royalty costs
- Low-cost, easy-to-use, industry-leading FPGA design tools

Conversion-Free Design Methodology

- Identical functionality and timing from prototypes to production
- Industry's only conversion-free design flow with no need for prototype verification, design qualification, or board redesign

Fastest Time to Market

- Eight weeks to production, with no prototype qualification required

Proven Quality and Reliability

- Same qualification criteria and metrics as Xilinx FPGAs
- Better test coverage than with ASICs and best FIT rates in the industry

The Lowest Total

Unbeatable Value

EasyPath FPGAs deliver prices below those of Structured ASICs, the industry's lowest NRE starting at \$75K, and the shortest lead times to volume production—with none of the unwanted overhead associated with ASICs. These advantages make it the lowest total-cost solution in the market.

Conversion-Free. Fastest time-to-market.

With ASICs or Structured ASICs, any design errors or changes to the specification result in a respin, which further adds to the total cost of development and results in a delay in product rollout. EasyPath devices are identical in functionality and timing to the standard FPGAs, which means no additional engineering expenses for verifying and requalifying the prototypes.

Xilinx delivers EasyPath FPGAs in volume production in eight weeks from the time customers perfect the design, as shown in Figure 1.



Figure 1: Fastest times to production

Most Comprehensive Selection of Platforms

With four feature-rich families and six design platforms, coupled with the industry's most popular design tools and broadest portfolio of hard and soft IP, the Xilinx EasyPath solution offers an unmatched selection of platforms.

Xilinx EasyPath devices are now offered for the Virtex-4, Spartan-3, Virtex-II and Virtex-II Pro product families, ranging from 20,000 logic cells to 200,000 logic cells across 28 devices, as shown in the Table 1 below.

SPARTAN-3 EASYPATH	VIRTEX-II EASYPATH SOLUTIONS	VIRTEX-II PRO EASYPATH SOLUTIONS	VIRTEX-4 EASYPATH			Logic Cells
			LX	SX	FX	
			4VLX25	4VSX25	4VFX20	< 25,000
3S1500	2V3000	2VP30		4VSX35		< 35,000
3S2000		2VP40	4VLX40		4VFX40	< 45,000
	2V4000	2VP50		4VSX40		< 55,000
3S4000			4VLX60		4VFX60	< 65,000
3S5000	2V6000	2VP70, 2VPX70				< 75,000
			4VLX80		4VFX100	< 95,000
	2V8000	2VP100	4VLX100			< 115,000
			4VLX160		4VFX140	< 150,000
			4VLX200			< 200,000

Table 1: Industry's only one-to-one match from FPGAs to volume production

al-Cost Solution

Superior Flexibility

With ASICs and Structured ASICs, customers incur a huge penalty for making changes, while the Xilinx programmable logic devices have always offered the capability to make changes to your design.

Now, customers can enjoy similar flexibility at the lowest unit prices in the industry. This is illustrated in Figures 2 and 3.¹

Xilinx offers EasyPath FPGA devices with fully tested LUTs and I/Os tested for drive strengths and slew rates, allowing ECO (i.e., engineering change order-like revisions) at the LUT or the I/O level.

This eliminates any respin and conversion-related engineering effort, delay, and expenses associated with ASICs and Structured ASICs.

¹The flexibility features are offered for Spartan-3 and Virtex-4 EasyPath only. Additional charges apply to flexibility features.

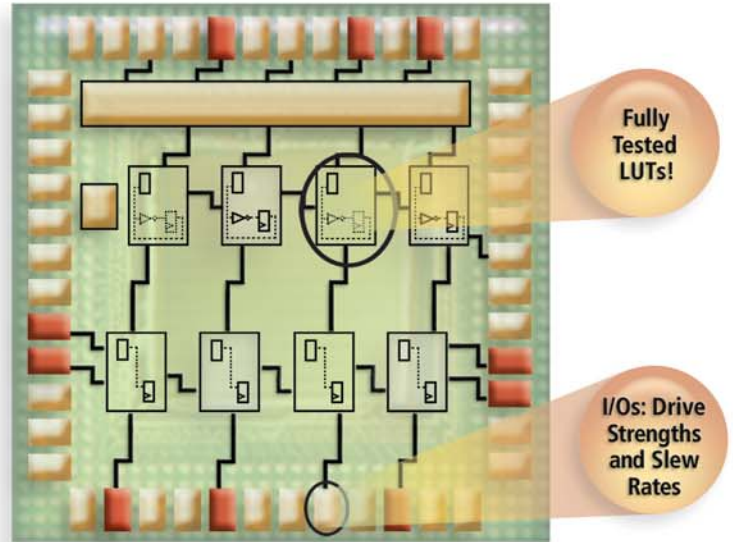


Figure 2: Flexible LUTs and I/Os

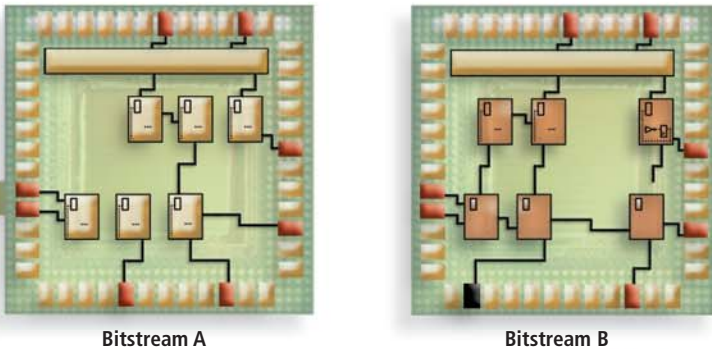
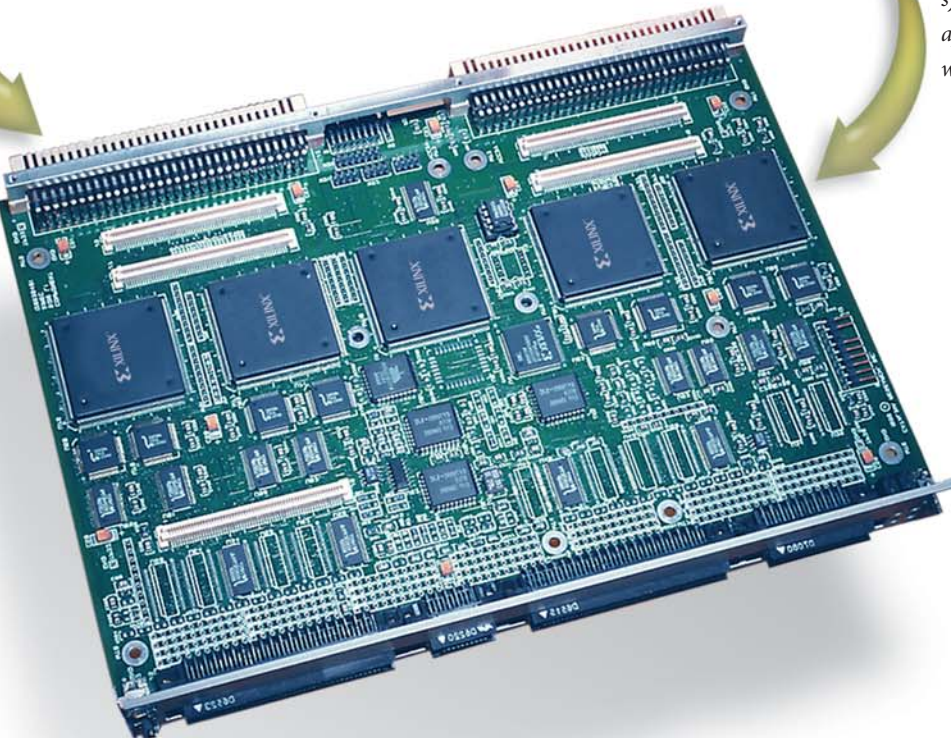


Figure 3: Dual Bit Stream Support

EasyPath FPGAs can now be tested for two designs. This means you can now enjoy greater flexibility, while also saving on BOM and inventory costs.

For example, a customer can use one bitstream to perform system diagnostics on the entire system and then load the second application specific bitstream. This reduces the cost associated with manufacturing the system.



Widest Selection of IP and Tools at Lowest Cost

The next-generation EasyPath solutions leverage the robust Xilinx development ecosystem, which features hard-IP support for many feature-rich building blocks, including the multi-gigabit serial transceivers, PowerPC, XtremeDSP™ and the Tri-Mode Ethernet MAC cores.

Plus, Xilinx offers more than 600 proven soft-IP cores with no additional royalty or conversion requirements for EasyPath FPGAs. In addition, the EasyPath solution includes ISE, the industry's #1 rated FPGA design software, which delivers a low-cost, easy-to-use development suite for designing Xilinx FPGAs.



The Superior Design Platform

The lowest total cost, conversion-free methodology, and unprecedented flexibility make EasyPath FPGAs the superior design platform for volume production compared to Structured ASICs (Table 2).

Take the Next Step

Test drive the Xilinx cost analyzer and see for yourself how EasyPath FPGAs are the industry's lowest total-cost solution. For more details on our complete EasyPath solutions, **visit www.xilinx.com/easypath** or contact one of the Xilinx sales offices listed below.

Selection Criteria	Structured ASICs*	EasyPath FPGAs
Time to Prototype Samples	4-8 weeks	0 weeks
Total Time to Volume Production	12-15 weeks	8 weeks
Vendor NRE/Mask Costs	\$100K-\$200K	\$75K
Design Costs for Conversion	\$250K-\$300K	\$0
Additional Cost of Tools for Conversion	\$100-\$200K	\$0
Unit Costs	Low	Low
Risk	High	Low
Flexibility to Make Changes In-System	Inflexible	Flexible
Design Conversion from Prototype to Production	Additional Engineering	Conversion-Free

* Xilinx market analysis

Table 2: Clear design alternative for volume production

Corporate Headquarters

Xilinx, Inc.
2100 Logic Drive
San Jose, CA 95124
Tel: 408-559-7778
Web: www.xilinx.com

Europe

Xilinx, Ltd.
Citywest Business Campus
Saggart,
Co. Dublin
Ireland
Tel: +353-1-464-0311
Web: www.xilinx.com

Japan

Xilinx, K. K.
Shinjuku Square Tower 18F
6-22-1 Nishi-Shinjuku
Shinjuku-ku, Tokyo
163-1118, Japan
Tel: 81-3-5321-7711
Web: www.xilinx.co.jp

Asia Pacific

Xilinx, Asia Pacific
Unit 1201, Tower 6
Gateway
9 Canton Road
Tsimshatsui, Kowloon,
Hong Kong
Tel: 852-2-424-5200
E-mail: asiapac@xilinx.com

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