

Converting XC4000E/EX FPGAs to ASICs



Xilinx recently released the XH3 family, a new HardWire™ conversion technology for XC4000E and XC4000EX designs.

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The XH3 architecture is a revolutionary step in FPGA-to-ASIC conversion, providing an effective silicon platform that closely emulates the XC4000E and XC4000EX architectures.

We have offered low-cost ASIC versions of our FPGAs since 1991, making it easy for you to enjoy the benefits of programmability and still reduce the cost of high volume designs. The same design files used to create your original FPGA are used throughout the HardWire conversion process; both the placement and routing of your original FPGA are preserved.

Our new XH3 family of HardWire products includes critical Xilinx FPGA features built into the die. Because of the match in feature set, we can provide form, fit, and function equivalence that closely matches our FPGAs.

Xilinx XH3 Features

The XH3 family features:

- The only turnkey, 100% compatible conversion path for Xilinx FPGAs.
- Patented DesignLock™ conversion methodology.
- Supports conversion of all Xilinx FPGA features, including Select-RAM™, JTAG, and configuration emulation.

An XC4000E or XC4000EX design is converted into a particular XH3 base array depending upon the number of gates and I/O required. Table 1 shows which XH3 base array is selected as the approximate target for each FPGA density and package size.

The Xilinx HardWire family is part of a complete solution, giving you fast and efficient prototyping and system development, as well as low cost, high volume production capability. Plus, FPGAs and HardWire products are interchangeable, offering flexibility for cost reductions, future design changes, and end-of-life management of your product.

For more information about Xilinx HardWire products, go to our website at:

<http://www.xilinx.com/products/hardwire/hardwirehome.htm>

Here, you will also see our “Xilinx ASIC Estimator.” With this Web-based tool, you will be able to model all of your project costs (including some you may not have considered before) to see how inexpensive it is to use Xilinx FPGAs and the HardWire family for high volume applications compared to the hidden costs of using ASICs. ₤

FPGA	Max I/O	PACKAGE TYPE								
		PC84	PQ/VQ100	TQ144	PQ160	PQ208	PQ240	BG225	BG352	BG432
XC4003E	80	XH304	XH304							
XC4005E	112	XH304	XH304	XH304	XH304	XH306				
XC4006E	128	XH304		XH304	XH304	XH306				
XC4008E	144	XH306			XH306	XH306				
XC4010E	160	XH306			XH306	XH306		XH308		
XC4013E	192				XH308	XH308	XH308	XH308		
XC4020E	224					XH310	XH310			
XC4025E	256						XH312			
XC4028EX	256					XH312	XH312		XH312	
XC4036EX	288						XH312		XH312	XH312