



# Embedded Users Tell EMF Who's Hot, Who's Not

Surveys reveal that Xilinx leads in familiarity with and usage of embedded processing FPGAs.



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Embedded Market Forecasters (EMF) has become the principal source of design data, design outcomes, and embedded developer user profiles for many government agencies and several prime contractors. These agencies and contractors use their database and Executive Embedded Dashboard to benchmark their developers against the larger industry and to gain insights for purchasing decisions.

## Analytics

EMF conducted two comprehensive surveys of embedded developers in May and July 2006. Now in their sixth year, these surveys use a statistically accurate methodology to randomly select a sub-section of developers that would represent a comprehensive look at embedded market dynamics.

Respondents identified their principal vertical market; the chips, software, and tools they are using; development process;

perceived best practices; and programming languages. We also asked them to indicate the issues of most concern, considerations for selecting a vendor, and their budget for solving these problems. We set up the EMF database to filter responses by vendor as well as other factors.

Developers that use embedded processing FPGAs or CPLDs in their designs were asked to identify:

- Which microprocessor architecture they design with
- Which vendors' products they were familiar with
- Which vendors' products they were currently using (including multiple vendors)
- Which vendors' products they had shipped a product with
- Which vendors they plan to use in the next 12-month period

The way the database was organized, we were able to make unlimited cross tabs to analyze trends, vendor marketing advantages, vendor marketing deficiencies, and user profiles for any vendor's products.

What we report on herein is how embedded processing FPGA/CPLD users view, use, and respond to the top seven vendors in this market segment. We did not include in this analysis responses that did not mention one of the seven vendors because we wanted to look at the competitive interactions between these top suppliers.

## Results

The results shown in Figure 1 (taken from the July EMF survey, "Embedded Hardware/Software Design Preferences") compare microprocessor architectures used in embedded processing designs. The data clearly shows that 68% of the respondents indicated that they design with platform FPGAs that include hard and soft-processor cores such as the Xilinx® Virtex™-4 FX FPGA with immersed PowerPC™ hard processor and the Xilinx 32-bit MicroBlaze™ and 8-bit PicoBlaze™ soft processors.

One of the major appeals of an FPGA embedded solution is the ability to easily integrate the CPU, buses, memory, and peripheral IP functions to create a cus-

tomized processor subsystem. That leaves the development team with more time to concentrate on the “secret sauce” that differentiates their product.

Other considerations for developers designing with embedded processing FPGAs is the requirement for the FPGA vendor to support a wide range of industry-standard interfaces, operating systems, and provide an integrated development environment (IDE) with compiler and debugger tools. Xilinx has achieved market leadership by introducing award-winning products such as the Platform Studio IDE, a library of peripheral IP cores, the integrated Eclipse software development environment, a GNU compiler and debugger, and an extensive ecosystem of third-party partner tools and boards that meet the needs of embedded developers.

The EMF “Survey of Embedded Developers” was fielded in May 2006. In Figure 2, the 507 respondents (with statistical confidence of 95% +/- 4.5%) overwhelmingly selected Xilinx as the FPGA vendor with which they were most familiar, currently using products from, shipping a product with, and planning to use in their next design.

It is clear from the data that Xilinx remains the market leader in all categories. This has been the result of surveys going back to 2003.

It is interesting to note in Figure 3 (although the data is not expressly presented here) that if, in either analysis of the EMF data across all vertical markets or the EMF data specific to large companies, you first filtered the database on those developers familiar with Altera, Xilinx remains the leading response to the questions “which vendor are you currently using” and “which vendor’s products do you plan to use in the next 12 months.”

Clearly, Xilinx competitors need to re-examine their current strategies, design philosophies, and market initiatives if they wish to make inroads against the market leader.

You can find information about Embedded Market Forecasters and free downloads at [www.embeddedforecast.com](http://www.embeddedforecast.com).

### Microprocessor Architecture Used in Embedded Designs

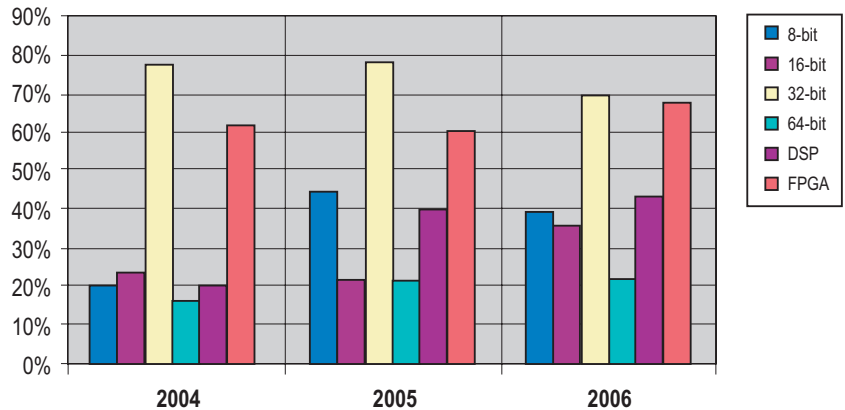


Figure 1 – Platform FPGAs are used in 68% of embedded processing designs.

### 2006 EMF Survey Results

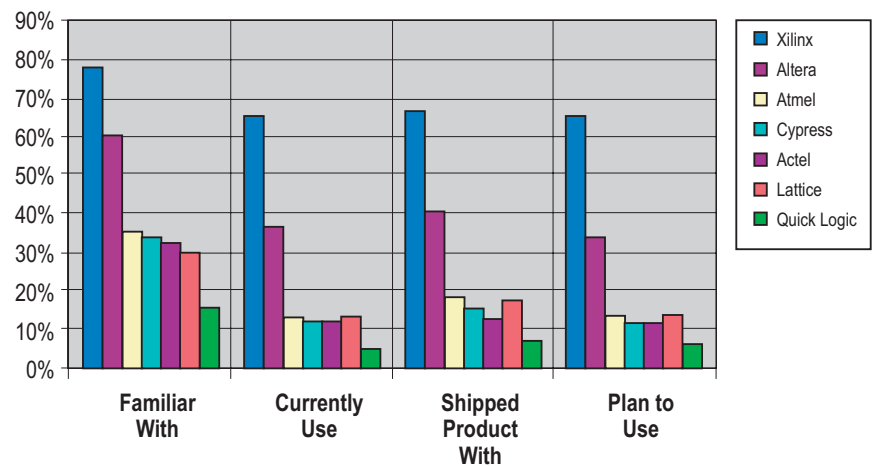


Figure 2 – Xilinx is the embedded processing FPGA market leader.

### 2006 EMF Survey – Large Company Responses

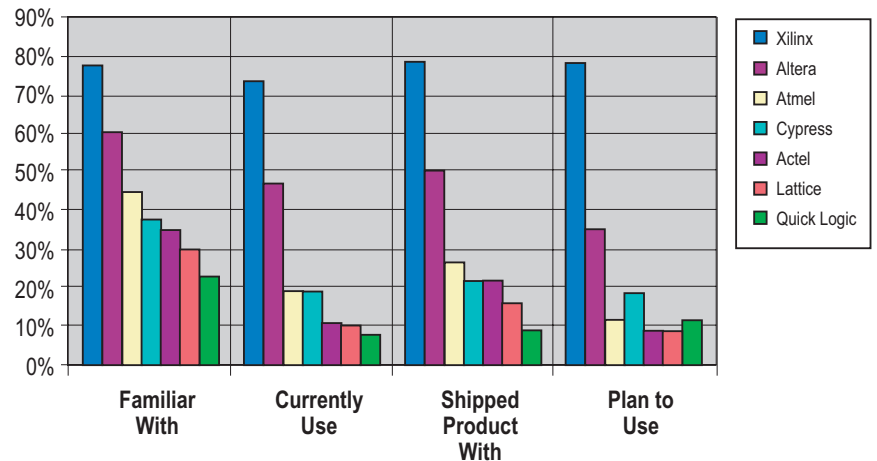


Figure 3 – Xilinx ranks #1 in all categories.