



Programmable Logic in High-Volume Applications

Spartan FPGAs and CoolRunner-II CPLDs meet the security, differentiation, and flexibility needs of the high-volume market.

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Programmable logic plays a key role in high-volume applications such as consumer, automotive, and industrial market segments, as OEMs demand lower system costs, higher system integration, and faster time to market while also trying to create innovative and differentiated products. Customer requirements also vary widely as OEMs balance cost, performance, and product features to target different end customers. Although ASICs and ASSPs have traditionally played in these markets, the high initial costs and risks associated with ASICs and the inflexibility of ASSPs are not conducive to timely and cost-effective products.

Xilinx has addressed OEM needs by providing domain-optimized platforms such as Xilinx® Spartan™ series FPGAs and CoolRunner™-II CPLDs. The product families are tailored toward very different customer requirements in a wide variety of high-volume market segments. For example, CoolRunner-II products are optimized for battery-operated portable applications that value power consumption, while the non-volatile Spartan-3AN platform is optimized for applications that require high system integration or design security. The flexibility and quick time-to-market advantages of programmable logic devices minimize the risk and maximize the probability of timely and successful products.

Design Security

As companies are pressed to reduce overall product costs, the design and manufacturing of high-volume products is moving to areas where lower labor costs significantly drive down manufacturing costs. Although OEMs have enjoyed the benefits of lower manufacturing costs, they have also experienced new problems, as these same contract manufacturers sought to clone the OEM's designs or overbuild additional units. These unauthorized manufactured devices are lost revenue when sold in the marketplace and can also create additional costs if defective units are returned to the company for service or replacement.

As a result, design security has become essential. Xilinx products offer a wide range of security methods in products uniquely suited for high-volume applications.

Product Differentiation and Flexibility

OEMs are constantly adapting to standards that have evolved for better performance, more flexibility, or to address existing limitations. In addition, the ratification of a standard can take a long time, especially as more and more stakeholders participate in the approval process. OEMs must make hard deci-

sions and trade-offs between time to market and feature set when considering the adoption of these standards.

Field upgrades allow an OEM to bring devices to market with the flexibility to update them after being released to mass production. This extends the device lifecycle tremendously, and without a lot of investment from the OEM. An OEM can now release devices without fear that a newly endorsed standard will render their device obsolete in the marketplace.

Spartan FPGAs and CoolRunner-II CPLDs allow OEMs to quickly adapt to changes. Decisions such as protocols, buses, and number of interfaces can all be changed to quickly address new market requirements.

Conclusion

The dynamic nature of high-volume applications is causing unprecedented challenges for design engineers. OEMs must deliver products that are not only feature-rich and power-efficient, but cost-efficient and quick to market as well. The comprehensive portfolio of domain-optimized Spartan series FPGA and CoolRunner-II CPLD products gives designers the best choice for their designs. ●●●