

# Protect Your Brand with Spartan-3 Generation FPGAs

## Build a low-cost security solution for high-volume applications.

In today's world, security is a huge concern for our global society. Whether boarding a plane, closing the front door, or beginning your next-generation circuit design, security has become a significant issue.

In our homes, we try to build in the right amount of security to protect ourselves against theft. Security is rapidly becoming a necessity in the electronics industry as well. It is important to understand why security issues have escalated to the forefront in the electronics design field.

One reason is the alarming amount of counterfeited goods that are the result of theft. These goods threaten the economy and have a significant effect worldwide in the consumer markets, according to the Anti-Counterfeiting Coalition. The World Customs Organization estimates that counterfeiting accounts for 5% to 7% of global merchandise trade, equivalent to lost sales of as much as \$512 billion in 2004. This threat grows by more than 12% per year, tarnishing the reputation and long-term credibility of genuine brands.


High-volume solutions, served by Xilinx® Spartan™-3 Generation FPGAs and CoolRunner™-II CPLDs, include technologies such as configuration data protection, hidden bitstream, active defense, and Device DNA design-level security for low-cost hardware and software IP protection. Taken together, these features enable designers to implement a low-cost, highly robust security solution to deter reverse-engineering, cloning, and overbuilding.

### How Device DNA Works

The Device DNA security mechanism is similar to an ATM transaction, in which the active value generated from the card-plus-pin combination is compared to a number stored in a bank computer that authorizes or rejects the transaction.

Similarly, the unique 57-bit Device DNA number is used with a customer-defined security algorithm to generate an

active value. The active value is compared to a pre-stored check value to determine whether design functionality can proceed.

Our Device DNA demo highlights how easy it is to implement a low-cost security solution for high-volume applications with Device DNA technology. It requires either the Spartan-3A FPGA Starter Kit or the Spartan-3AN FPGA Starter Kit. Documentation is provided. 

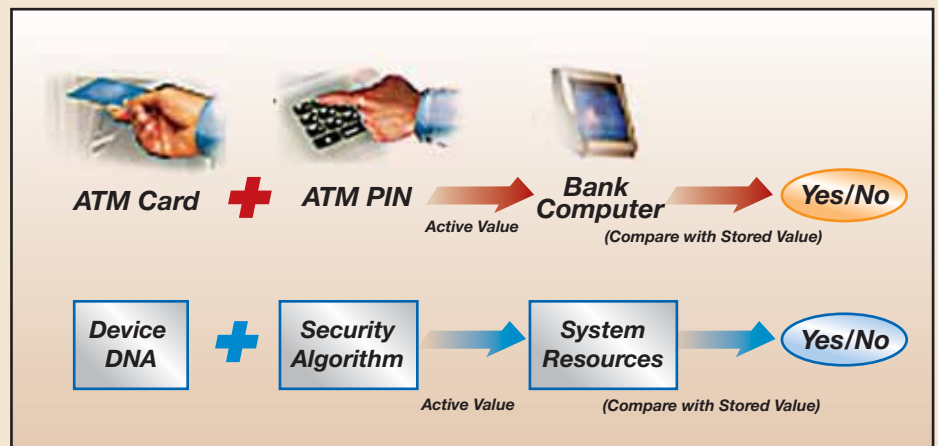


Figure 1 – Similarities between Device DNA security and ATM transactions

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- Download the Device DNA demo.
- Read the white papers, "Security Solutions Using Spartan-3 Generation FPGAs" and "Advanced Security Schemes for Spartan-3A/3AN/3A DSP FPGAs."
- Read the brochure, "Design Security for High-Volume Applications."