

# Cardless Biometric Payment System Uses the XC95216

*The SmartTouch system allows consumers to access their financial accounts without requiring them to carry credit, debit, or frequent shopper cards to prove who they are.*

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Imagine being able to buy goods and services at a retail point of sale without needing to carry your wallet, your cash, your credit cards, or your debit cards; in fact, without needing to carry anything at all. Berkeley, California-based start-up SmartTouch, Inc. is making that vision a reality with its patented Cardless Biometric Payment System.

The SmartTouch processing network uses a finger image and a numeric code to identify the consumer, and then translates this identity into financial account information. “It’s the ultimate in convenience, security, and freedom,” says Phil Lapsley, VP of Engineering at SmartTouch.

A consumer interacts with the SmartTouch system through the SmartPad point-of-sale terminal. The SmartPad is responsible for collecting a consumer’s finger image and numeric code, for transmitting this information into the SmartTouch network, and for displaying results back to the consumer.

The SmartPad consists of a 133-MHz 486 CPU with DRAM and flash ROM memory, a finger-image scanner, a keypad, an LCD display, a magnetic-stripe card reader, and a number of communication ports. Connecting it all together is a Xilinx XC95216 CPLD that interfaces the CPU to the finger-imaging chip, the LCD, the keypad, the magnetic stripe reader, and the communication ports.

According to Lapsley, “Using a Xilinx 9500-series CPLD was one of the best decisions we made. The in-system programma-

bility allowed us to quickly iterate towards the exact design that our customers needed, without wasting time burning serial EEPROMS. And now that we’re in the field, the SmartPad can reprogram its CPLD under software control to deal with field upgrades.”

“Moreover,” says Lapsley, “the 95216 has allowed us to change things on the fly to support new requirements. For example, we can interface with several different fingerprint imaging chips. And thanks to the XC9500 pin locking capabilities, we’ve been able to do all this without having to re-layout our PCBs.”

Lapsley also cited technical support as one of the reasons why he has been so pleased with Xilinx. “Our FAE, Bruce Shem, has been wonderful. He gets back to us promptly when we have questions and he makes sure we have the most up-to-date software. He actually came out and installed the software on our workstations when we first started working with Xilinx parts. “

So, when can you expect to see SmartTouch in a store near you? “Soon,” says Lapsley. “We’re currently in two field trials—one at a chain of high-quality fast-food restaurants and another at one of the major credit card companies. People are excited about the technology. We’re lining up our next pilot sites right now, and our first major rollouts should follow soon after.” ❧

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