

The future of credit-card security may involve blinking numbers

French digital security company Oberthur Technologies is hoping to revolutionize credit cards by developing a digital display powered by a micro-thin battery and what it calls Motion Code technology.



By **Ronald D. White**

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Your credit card may start winking at you soon in an effort to keep your data safe.

French digital security company Oberthur Technologies, which maintains a significant design and production operation in Los Angeles, has developed a digital display powered by a micro-thin battery. It will change the three or four-digit CVV number — that stands for credit verification value — on the

back of credit and debit cards as often as 72 times every 24 hours.

This latest defense against financial data theft wasn't available for Black Friday or Cyber Monday. But when it comes to the United States, as early as 2017, it may help plastic remain the dominant payment option.

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U.S. businesses, cardholders slowly embracing chip technology

Oberthur's Motion Code technology promises relief to U.S. merchants who haven't exactly embraced the most recent technology upgrade — security chips built into credit cards. This new development won't require retailers to buy expensive new hardware to process transactions.

“There is a constant balancing act between security and simplicity,” said Martin Ferenczi, Oberthur's president for North America operations. “Motion Code solves this better than any other option.”

The United States has been a laggard in adopting technology to protect credit and debit card data, and consumers and merchants have wound up paying for the delays.

Americans account for about 23% of global purchases and cash volume but suffer nearly 39% of the world's credit card fraud, according to the Nilson Report, which tracks payment card data. That's because the United

States hasn't embraced what is pretty much old news in Europe — so-called EMV smart-chip cards, named for developers Europay, Mastercard and Visa.

The embedded EMV chip is that small metallic-colored square that is usually found on the left of the credit card's face. The chip issues a special code with each use, making it far more difficult to counterfeit a payment card.

"Keeping up with the current EMV chip technology hasn't been simple," said John G. Mooney, who specializes in information systems and technology management as an associate professor at Pepperdine University's business school.

"Merchants have been slow to adopt the chip readers," Mooney said, partly because the smartcards require a chip reader that can cost \$500 apiece. "Many are still using the old swipe machines which do not take advantage of the chip."

As of October, about 2 million U.S. merchants had installed the chip readers, or about 25% of the nation's 8 million retail establishments, according to the Nilson Report. Moreover, some businesses that have the chip readers aren't using them yet.

The EMV chips also have limitations, doing "nothing for the consumer when he is sitting in front of the computer, tablet or phone, online, and deciding to buy whatever it is he wants to buy," Ferenczi said.

Some have tried to add security to online credit transactions by requiring an added step of verification, such as a number that is texted to one's phone or sent to an email address.

"The number of transactions that are dropped through this is too high," Ferenczi said. "Merchants don't really like it. The phone might not be on or the battery might be dead or you might not be able to get to your email quickly enough."

Ferenczi said Oberthur's Motion Code improves the safety of in-store and online payments without expecting more from the merchant or the consumer.

Lawrence Harris, a finance professor at USC's business school, agreed that "creating a system that changes the CVV number on a regular basis provides an additional level of security."

"That should be very attractive to merchants and card issuers," he said. "Consumers can use their cards over the Internet with some additional confidence."

Oberthur, the world's second largest manufacturer of chip-enabled smartcards, employs about 1,200 people in the United States and Canada, part of a global workforce of nearly 6,500. About 300 work in Southern California.

The new Motion Code technology hasn't arrived yet at the Oberthur facility in Rancho Dominguez, where workers put the final touches on plastic cards produced at an Oberthur factory in Pennsylvania.

The plastic is mated with the personal information of a future cardholder on something that resembles an assembly line in miniature. The company recently upgraded its network of Oberthur machines, which rapidly improved output, said William Hoskins, the facility's deputy director.

"The card is finished in one pass through the machine, which is twice fast as the equipment we used to use," Hoskins said. "We have more than doubled our production capacity to 200 million cards per year."

The work is taken very seriously at Oberthur. The windows have steel bars as thick as those used to protect fine art storage buildings. Reflective window glass means no one can see inside.

The secured sections of the building sit behind turnstiles so sensitive that workers have done face-plants into the glass before mastering the technique.

Smartphones are collected at the door. The lab coats have pockets just wide enough for a pen and little else. Getting a job there requires 10 years of employment and residential history.

Theft isn't the only threat facing Oberthur.

Digital payments using the likes of Apple Pay, Samsung Pay, Venmo and Google are making inroads into the use of credit cards. Millennials are the biggest concern because they haven't shown the same trust in banking as previous generations, experts say.

"I don't think that credit cards are going to go away for quite some time," Pepperdine's Mooney said. But, he added, "I would not bet on the credit card industry continuing to be as profitable as it has been."

Ferenczi said Oberthur's own history is one reason to have faith in its future. The company name comes from François-Charles Oberthur, a master printer and lithographer whose company in 1842 produced currencies and stock certificates.

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Oberthur eventually got out of the paper money business, expecting plastic payment cards to replace banknotes. But paper currencies survived. So will plastic, Ferenczi said.

Even so, Oberthur has hedged its bets widely. For one thing, its products are also inside smartphone hardware.

“You have a SIM card in your phone,” Ferenczi said. “We produce SIM cards for the largest mobile networks in the world.” Additionally, Oberthur’s reach extends to “citizen access and identity. We are involved with electronic passports, electronic identification cards and other types of physical access IDs.”

“We consider ourselves as an embedded security software developer,” Ferenczi said. “We don’t have any fear that the need for that technology is going to go away.”

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