SECURE ICS FOR BANKING AND FINANCE

Security is the key ...
... to success in finance.

Atmel's wide range of high-security ICs is ideal for Credit Cards, Debit Cards, Electronic Purse, e-Commerce and Loyalty Schemes.

Image: Atmel

- **Experience dating from the origin of electronic payments by Smart Card**
- **Security established during years of intensive use**
- **EMV-compliant, as required by most payment schemes**
- **In qualification for ITSEC E3 and Common Criteria EAL4+ security certification**
- **Memory and processing power more than adequate for multi-applications such as transport/payment**
- **Secure MCU-based ICs embedding Flash or ROM program memory, EEPROM data memory, with hardware DES and crypto-processor options**
- **Dual-interface contact/contactless derivatives in development**

Security...

People will only use electronic methods of payment if they are confident that they are secure. This mandates an unbreakable chain of security covering every aspect of the payment system. A vital link in this chain is the IC embedded in the payment card.

...through Experience

Atmel is one of the industry's most experienced manufacturers of integrated circuits for electronic payment. The security of our ICs has been certified by independent authorities, and validated by hundreds of millions of devices in everyday use.

ATMEL

The Smart Card industry had its origins in the need to reduce fraud in credit card payments. One of the pioneering ICs, chosen by the French banking industry for the roll-out of the first Smart Cards in 1992, was based on the M68HC05 microcontroller, the predecessor of Atmel's AT05SC series. Millions of smart bank cards have since been issued, and the level of fraud is at an all-time low.

A Leader in Today's Market

The success of the French system has lead the payment industry, through the co-operation between Europay, MasterCard and Visa, to create the international EMV specification. This forms the basis of most payment schemes implemented today. The M68HC05 derivative from Atmel is still providing highly secure chip solutions for many of these payment schemes. They include France's B0' solution for VisaCash and EMV implementations around the world.

M-commerce poses the next challenge for secure ICs

The payment industry requirements continue to evolve, with both cost-effective single-application requirements and sophisticated multi-application products with cryptographic capability. Even dual-interface contact/contactless products are now being demanded for multi-application products, combining payment applications with mass-transit applications.

Independent Security Certification

Today's Smart Card-based payment systems must not only seem secure but must stand scrutiny from independent assessment apart from the claims of vendors. This is why Atmel has pursued security certifications for its ICs from independent government bodies such as ITSEC E3 and Common Criteria EAL4+ for high security requirements. These certifications are the highest level normally required for non-military applications including banking and payments systems for Smart Cards.

Additional security features such as hardware DES and crypto-processor are added on some products for applications requiring fast execution of cryptographic routines.

A Product Range for All Requirements

Atmel's wide range of secure IC products provide the optimum choice to meet the stringent requirements of systems integrators and card embedders in the finance industry. From a cost-effective ROM-based solution for single-application requirement to a dual-interface contact/contactless card or Flash-based crypto-controller for multi-application needs, or just the advantages of Flash technology for fast time-to-market, Atmel has a solution to meet the need.

Atmel's Roadmap for Secure ICs for Financial Applications

AT05SC Series	ROM K bytes	EEPROM K bytes	RAM K bytes	Crypto Coprocessor	DES Hardware
AT05SC4616R	46	16	1.5	No	Yes
AT05SC3208R	32	8	1	No	Yes
AT05SC1604R	16	4	1	No	No
AT05SC1602R	16	2	0.5	No	No
AT05SC4808RF	48	8	1	No	Yes

AT90SC Series	Flash K bytes	EEPROM K bytes	RAM K bytes	Crypto Coprocessor	DES Hardware
AT90SC6464C	64	64	3	Yes	Yes
AT90SC3232C	32	32	1.5	Yes	No
AT90SC3232	32	32	1.5	No	No
AT90SC1616C	16	16	1	Yes	No