Infineon launches SOLID FLASH technology

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Infineon Technologies AG today at the "Cartes & Identification" Trade Show in Paris announced the introduction of 90nm SOLID FLASH technology for its new generation of security ICs. With SOLID FLASH, Infineon is the worldwide first supplier of security products combining the advantages of highly flexible and reliable Flash with outstanding and secure contactless performance, targeting applications like payment, government ID, high-end mobile communications and transport. Leveraging its proven, longstanding expertise in automotive Flash and the comprehensive history from selling more than three billion chip card devices using EEPROM/Flash-based non-volatile memory, Infineon now offers its customers a variety of SOLID FLASH products with both high flexibility and ROM-like security. Dedicated security features enable a secure and reliable product usage, which has already been officially acknowledged by EMVCo and Common Criteria EAL 5+ (high) certifications for the first SOLID FLASH products.

“Infineon has been setting industry trends since the beginning of the smart card industry about 25 years ago. Our new SOLID FLASH technology combines proven flash technology with dedicated security features, this further proves Infineon’s innovative role,” said Helmut Gassel, President of the Chip Card & Security Division at Infineon Technologies. “By providing a comprehensive product portfolio of SOLID FLASH-based products Infineon will continue to drive the industry trend towards flexible, contactless yet secure chip solutions.”

The flexibility of the Flash technology results in significant time savings and both complexity and risk reduction over the whole value chain. With

Infineon's SOLID FLASH technology, customers benefit in various ways; for example by allowing a fast and easy prototyping, sampling and code change through the immediate availability of hardware samples with SOLID FLASH-based security controllers. Furthermore the lead times for chip production based on forecast are reduced by more than 50 percent compared to mask ROM. While inventory management of the different mask ROM versions is very complex, SOLID FLASH products can be configured by the system integrators on demand and thus the storage of only a minimum variety of non-specific Flash products is required. This results in reduced planning efforts, inventory costs and risks, and a shorter time-to-market.

In addition, the mask costs of ROM products will significantly increase with the migration to lower geometries like 90nm or 65nm, while minimum order quantities of ROM will rise due to increasing lot sizes.

Besides the listed advantages in development and logistics processes, SOLID FLASH offers a sophisticated security concept, providing a similar security level compared to mask ROM. The functional security is ensured by a secure mask transfer, secure download and a special locking mechanism, which is realized by Infineon's specific flash loader and is certified together with the hardware. Infineon has also installed some architectural measures to ensure security on its products and to protect the memory against analysis and tearing. A hardware firewall separates code, data and other applications. In addition, the SOLID FLASH devices offer error correction, where 1-bit errors can be repaired. These specific security features make SOLID FLASH technology suitable even for high security chip card applications.

In developing SOLID FLASH, Infineon benefits from its leadership in both chip card and automotive IC technologies, as the same basic Flash cell concept both for automotive and for chip card products is used. Today, Flash-based products are already mainstream in the automotive

sector, and even in safety-critical automotive applications such as braking and airbag systems, no more ROM products are designed in. Chip card and security applications will deploy the same approved Uniform Channel Program (UCP) Flash cell with high data retention (at least ten years) and endurance characteristics that have been in use for years in 220nm, 130nm and now also in the 90nm Flash products.

Infineon will present the first 90nm SOLID FLASH products, the SLE 77 family, which targets contactbased SDA (Static Data Authentication) and DDA (Dynamic Data Authentication) payment, at its booth #4J 002 in hall 4 at the “Cartes & Identification” trade show (Paris-Nord, Villepinte Exhibition Centre, December 7-10, 2010). Further SOLID FLASH-based products will follow in 2011.

Provided by Infineon