SECURE
MICROCONTROLLERS

FAST TIME TO MARKET WITH PROVEN PERFORMANCE AND STABILITY

As a global leader in secure microcontrollers, WISeKey delivers a comprehensive portfolio of contact, contactless, and dual-interface products for developing secure applications. High reusability between products reduces development time and cost, while WISeKey's user-friendly hardware and software packaging allows code emulation on the entire range of products. Backed by 123 international patents, based on open standards, proven in the market, and delivered with proven production capacity, WISeKey products enable you to quickly bring to market innovative, differentiated products.

WISeKey combines innovative process technologies with advanced security features and cryptographic processor options to meet the stringent needs of the security market. Our tamper-resistant hardware platforms have received third-party certifications and approvals, including Common Criteria EAL5+, EMVCo, FIPS 140-2 Level 3 and Level 4, and ZKA.

- Payment EMV
- Mobile Payment
- ePasseport
- Government ID
- Health
- Transportation
- Access Control
- Pay TV
- USB e-Tokens
- Smart Meters
- Security Modules

WIS@key

The Right Product for Your Application

WISeKey offers product families that enable you to address a wide range of markets and applications. WISeKey products are used in bank card, conditional access and Pay TV, e-passport, and e-government document markets worldwide. WISeKey also offers solutions to embed security into any system.

Secure Microcontrollers 8-/16-bit RISC

WISeKey AT90SC provides a complete family of low-power, high-performance secure microcontrollers built on a 8-/16-bit RISC architecture. AT90SC features full compatibility among members of the family.

Contact Products

Suited to high-volume markets, WISeKey contact products are ideal for smart card and system applications where symmetric cryptography, such as Static Data Authentication for financial applications, is required. High performance, advanced security features and large memory capacity makes this product family the ideal choice for any native JavaCard implementation.

Contact Products with PKI Devices

Our Ad-X™ crypto co-processor offers the performance and security levels needed for all Dynamic Data Authentication (DDA) and PKI requirements. Software developers can select ciphering functions from our complete and certified library or build their own implementations.

TwinCore™

WISeKey TwinCore™ is the industry's first dual-core microcontroller designed to address the most demanding secure Smart Card applications, such as conditional access for Pay TV markets. Unlike standard secure microcontrollers, the TwinCore product offers two independent cores. The Secure Core is used for storing sensitive data and executing security operations. Secrets are always encrypted before being allowed to leave the vault. A flash die connected through the SPI interface can be stacked on the TwinCore and fit in a standard Smart Card module to offer mass storage capabilities.

Contactless and Dual Interface Products

Combining low-power contactless technology and security expertise, WISeKey's contactless and dual interface secure microcontrollers are specifically tailored to serve e-Government, transportation, and banking applications. High performance is combined with high security to protect the identity and privacy of card or passport holders.

Part Number	EEPROM	ROM	Flash	RAM	Voltage	Crypto Accelerator	Interfaces
8/16-bit RISC Microcontrollers							
Contact Products							
AT90SC9604RU	4K	96K	N/A	2K	2.7-5.5V	DES/TDES	ISO7816-3
AT90SC9604RV	4K	96K	N/A	2K	2.7-5.5V	DES/TDES	ISO7816-3
AT90SC9608RV	8K	96K	N/A	2K	2.7-5.5V	DES/TDES	ISO7816-3
AT90SC16018RU	18K	160K	N/A	4K	2.7-5.5V	DES/TDES	ISO7816-3
AT90SC19236RU	36K	192K	N/A	4K	1.62-5.5V	DES/TDES	ISO7816-3
AT90SC25672RU	72K	256K	N/A	6K	1.62-5.5V	DES/TDES	ISO7816-3
AT90SC288144RU	144K	288K	N/A	6K	1.62-5.5V	DES/TDES	ISO7816-3
Contact Products with PKI							
AT90SC13608RCV	8K	136K	N/A	4.5K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC13612RCU	12K	136K	N/A	4.5K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC20818RCU	18K	208K	N/A	4.5K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC20818RCV	18K	208K	N/A	6K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC12836RCT	36K	128K	N/A	5K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC24036RCU	36K	240K	N/A	6K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC24036RCV	36K	240K	N/A	6K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC28848RCU	48K	288K	N/A	8K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC25672RCT	72K	256K	N/A	8K	1.62-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC25672RCT-USB	72K	256K	N/A	8K	1.62-5.5V	DES/TDES, PKI	ISO7816-3, USB
AT90SC28872RCU	72K	288K	N/A	8K	2.7-5.5V	DES/TDES, PKI	ISO7816-3
AT90SC28880RCV	80K	288K	N/A	8K	2.7-5.5V	DES/TDES, AES, PKI	ISO7816-3
AT90SC144144CT	144K	N/A	144K	8K	1.62-5.5V	DES/TDES, PKI	SPI, ISO7816-3
AT90SC320288RCT	288K	320K	N/A	8K	1.62-5.5V	DES/TDES, PKI	ISO7816-3, SPI
AT90SDC100	36K + 18K	128K + 64K	N/A	6K + 6K	2.7-5.5V	DES/TDES, AES, PKI	ISO7816-3, SPI, GPIOs
AT90SDC104	36K + 18K	128K + 64K	4Mbit	6K + 6K	2.7-5.5V	DES/TDES, AES, PKI	ISO7816-3, SPI, GPIOs
Contactless Products							
AT90SC6408RFT	8K	64K	N/A	1.2K	2.7-5.5V	DES/TDES	ISO7816-3, ISO14443
AT90SC20818RCFV	18K	208K	N/A	6.2K	2.7-5.5V	DES/TDES, AES, PKI	ISO7816-3, ISO14443
AT90SC12872RCFT	72K	128K	N/A	5.2K	2.7-5.5V	DES/TDES, PKI	ISO7816-3, ISO14443
AT90SC28880RCFV	80K	288K	N/A	8.2K	2.7-5.5V	DES/TDES, AES, PKI	ISO7816-3, ISO14443
AT90SC256144RCFT	144K	256K	N/A	8.2K	2.7-5.5V	DES/TDES, PKI	ISO7816-3, ISO14443
32-bit RISC Microcontrollers							
AT91SC192192CT-USB	192K	-	192K	24K	1.62-5.5V	DES/TDES, PKI	USB 2.0, SWP, ISO7816-3, NAND Flash, SPI
AT91SC512384RCT	384K	512K	N/A	24K	1.62-5.5V	DES/TDES, PKI	USB 2.0, SWP, ISO7816-3, NAND Flash, SPI
AT91SC464384RCU	384K	464K	N/A	18K	1.62-5.5V	DES/TDES, PKI	ISO7816-3, SWP
Secure Microcontrollers for Embedded Security							
AT90SO4	4K	96K	N/A	2K	2.7-5.5V	DES/TDES	I2C, SPI, ISO7816-3, GPIOs
AT90SC12818RCU	18K	128K	N/A	6K	1.62-5.5V	DES/TDES, PKI	SPI, ISO7816-3, GPIOs
AT90SO72	72K	288K	N/A	8K	2.7-5.5V	DES/TDES, AES, PKI	USB 2.0, I2C, SPI, ISO7816-3, GPIOs
AT90SO128	128K	288K	N/A	12K	2.7-5.5V	DES/TDES, AES, PKI	USB 2.0, I2C, SPI, ISO7816-3, GPIOs

Secure Microcontrollers 32-bit RISC

When extra computing power is needed, or applications require multiple interfaces, choose WISeKey microcontrollers based on ARM® SecurCore™ technology. The AT91SC family offers low-power, high-performance, 32-bit RISC microcontrollers with ROM program memory, advanced EEPROM data memory, and cryptographic accelerators for RSA, ECC, and DES. AT91SC also provides multiple communication interfaces: ISO 7816, USB 2.0, SWP TS102613, SPI, and NAND.

Secure Microcontrollers for Embedded Security

To embed security deep WISeKey systems, industry-standard interfaces are required, in addition to high, smartcard-level security measures. The AT90SO product family offers a wide range of hardware interfaces, such as USB 2.0, SPI, I²C, and GPIOs to meet the requirements of your specific application. The platform provides cryptographic accelerators for symmetric (DES, AES) and asymmetric (RSA, ECC) algorithms and associated software libraries. In addition, WISeKey products are developed to be robust to meet application requirements in harsh environments.

Development Kit

To reduce and optimize development times, WISeKey 's user-friendly hardware and software package simplifies development and code emulation on the entire range of WISeKey products. The kit includes simulation and code emulation of AT90SC, AT90SO, and AT91SC products, as well as a complete set of tools for tuning and accelerating application development.

Product Guide

Part Number Identification   AT90SC XXX YYY R C F/T/U/V

AT90 : 8-/16-bit RISC core
AT91 : 32-bit SC100 RISC Core

SC : Secure Controller
SO : Secure Object
SDC : Secure Dual Core

XXX : ROM or Flash
YYY : EEPROM

R : ROM program memory
C : Crypto Co-processor

F : RF Interface
T : 0.18μm
U : 0.15μm
V : 0.13μm