

SMART CARD READERS

A SINGLE SOURCE OF HIGH PERFORMANCE VERSATILE ICS FOR ANY MARKET SEGMENT

WIS@Key's comprehensive Smart Card Reader IC portfolio enables customers to obtain high-performance ICs for virtually any market segment from a single vendor. WIS@Key offers hardware platforms alone and with integrated applications, allowing customers to quickly build smart card readers without requiring custom development.

A wide range of 8/16-bit RISC processors meet a variety of performance criteria and price points for reader solutions in smart card and e-ID applications. Turnkey versions provide pre-integrated solutions for accelerated time to market. Developed in partnership with industry leaders, WIS@Key single-chip smart card reader ICs can address any application using a serial, USB, smart card reader, including keyboards, set top boxes, POS terminals, laptops, PDAs, mobile phones add-ons, FemtoCells, and energy meters.

- Set Top Boxes
- Conditional Access Modules
- EFT, POS, Health Card Readers
- Synchronous, Asynchronous and USB smart Card, Fingerprint
- Standalone PC-Link Reader:
- Smart Card Keyboards
- USB Dongle Readers
- Physical and Logical Access
- Modem, Router



WIS@key

Key Features

Contact Smart Card Readers

- ROM and Flash-based from 16KB to 64KB
- USB Device and Host Interface
- High Speed SPI up to 24 Mbps, GPIOs, UART Synchronous,
- Smart Card Interface (3 cycles/ETU)
- Compliant with EMV, PC/SC, WHQL, USB
- Pre-certified Turnkey Solutions
- Remote Wake-up Functionality
- Cryptographic Capability
- FSL, Bootloader, Demo
- EMV L1 Operating System
- CCID compliant (no further USB driver required with hosts supporting CCID class)

Contactless Smart Card Readers

- Combined with RF Front end for Dual Readers

Contact Reader ICs

Smartread, 8/16-bit RISC Core Smart Card Reader ICs

This new ready-to-use family of smart card reader solutions is tailored to accelerate development of a variety of high-volume contact and contactless applications. Based on advanced 0.15-micron technology, WISEKEY AT90SCR100, AT90SCR200, AT90SCR075 and AT90SCR060 microcontrollers are pre-certified to all relevant industry standards, including EMV, PC/SC, ISO 7816, WHQL, USB, and are able to slash customer development times from about a year to just two to four weeks.

Ready-to-use Solutions

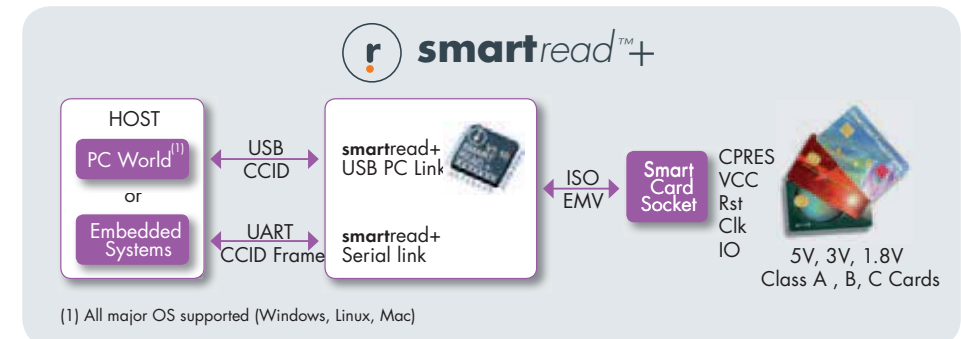
Developers preferring a bundled solution can rely on **smartread+** product offering.

Smartread+ are highly integrated solutions for any type of smart card readers.

As **smartread+** solutions are compliant with all relevant smart card standards, time-to-market and costs are significantly reduced. **Smartread+** solutions manage the electrical interface and communication with any ISO 7816-1/2/3/4 and EMV compatible smart cards.

Product Features

- **Host Interfaces**
 - USB 2.0 CCID (up to 12Mbps)
 - Serial UART (up to 115.2 Kbps)
 - SPI (Up to 20Mbps)
- **Chipset Power Supply**
 - 2.7V-5.5V
- **Tools & Documentation (refer to page 4 for details)**
 - Master Evaluation Board
 - Starter Kit
 - Chipset Reference Design
- **Smart Card Interface**
 - ISO7816 & EMV L1
 - T=0, T=1
 - 5V, 3V, 1.8V supported (Automatic Detection) ; 60mA
 - Temp Range : -40 to +85°C
 - Short circuit Current Limitation
 - Activation/Deactivation sequence



	ATP05CR060H	ATP05CR075H	ATP05CR075L	ATP05CR100H	ATP05CR100LSD	ATP05CR100HS	ATP05CR200H	ATP05CR200HS	ATP05CR200LSD	ATP05CR060HF200	ATP05CRx001FW200	ATP05CRx001FW110
	USB & Serial									USB	USB & Serial	
	smartread									smartread+		
Microcontroller												
FLASH (KB)				64	64	64	64	64	64		SharkOS	Serial Shark
ROM (KB)	16	48	48							SharkOS		
RAM (B)	2K	2K	2K	4K	4K	4K	4K	4K	4K	2K	4K	4K
CORE	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc	8/16Bit Risc
Firmware Single Slot										smartread+ USB PC-link	smartread+ USB PC-link	smartread+ Serial
Performance	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz
Serial Interface												
USB Device Endpoints	8	8	8	8	8	8	8	8	8	8	8	8
USB Host Endpoints				4	4	4	4	4	4		4	4
UART	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard SPI				✓	✓				✓			
High Speed SPI		✓	✓	✓		✓	✓	✓		✓	✓	✓
Card Interface												
Analog Interface	1	1	1	1	1	1	1	1	1	1	1	1
Synchronous Card	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
USB Card				✓	✓	✓	✓	✓	✓		✓	✓
ESD Protection	4kV	4kV	4kV	4kV	4kV	4kV	4kV	4kV	4kV	4kV	4kV	4kV
DC/DC Converter												
3V & 5V Modes	60mA	60mA	60mA	60mA	60mA	60mA	60mA	60mA	60mA	60mA	60mA	60mA
1,8V Mode	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA
Voltage Supervisor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other Features												
I/O Ports (LED)	(1)	8(2)	4(2)	38(4)	4(2)	4(2)	38(4)	5(2)	5(2)	(1)	38(4)	38(4)
Power Supply (V)	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5
Crypto Engine				AES/RNG	AES/RNG	AES/RNG	AES/RNG	AES/RNG	AES/RNG		AES/RNG	AES/RNG
Packages	QFN28 5x5	QFN40 5x5	QFN32 5x5	QFN64 9x9	QFN32 5x5	QFN32 5x5	QFN64 7.5x7.5	QFN32 5x5	QFN32 5x5	QFN28 5x5	QFN32 5x5	QFN32 5x5
Status												
ISO	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
EMV L1 Compliance	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y SCR200	Y : SCR200
Availability	Now	Now	Now	Now	Now	Now	Now	Now	Now	Q4 13	Now	Now

*: depending on housing refer to datasheet for details

Reference Designs and Tools

Development Kit for smartread micro-controllers

Development Kit includes a Master Evaluation Board(MEB) to quickly interface with the AT90SCR products in various host environments.

High-level software libraries and powerful scripting tool to easily design and integrate your Smart Card Reader application are also included.

In addition , Application note for easy integration (PCB layout recommendation) is available from WISeKey Website.

What's in your Development Kit?

- A Master Evaluation Board : AT90SCR100MEB
- 1 CD-ROM (see content hereafter)
- 1 USB cable
- 1 Smart Card for testing purpose
- A Set of product samples (Targeted package to be defined at order entry level)

What's on your CD-ROM?

- Support documentation set (datasheet, application notes).
- Basic software
- Application demonstration
- Bootloader
- T=0 protocol library
- Application around DC/DC : Activation/De-activation sequence, communication software example
- Smart Access : scripting tool to write sequences of commands

System Requirement:

- Microsoft®Windows®2000, XP or Vista
- AVR Studio (4.17 and later) or IAR EWAVR (5.20 and later)
- AVR JTAGICE mkII
- External power supply

Smartread+ Serial & USB PC Link Solution tools

- **smartread+ Serial**
For Serial connection to Host, a dedicated Starter Kit (AT90SCR200STK) enable the easy implementation of EMVco pre-certified chipset in embedded system environment
Starter Kit comes with CD-ROM (see cription above).
Libraries (source code) to be compile on CPU host are included.
- **smartread+ USB PC-link**
For USB connection to Host, Reference Design (AT90SCR060CRD or Master Evaluation Board (AT90SCR100MEB) are proposed for fast and easy integration.



For more information about WISeKey Smart Card Readers, please visit www.wisekey.com

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