

SMART CARD READERS

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

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

A wide range of 8-bit CISC and 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, INSIDE single-chip smart card reader ICs can address any application using a serial, USB, or PCMCIA smart card reader, including keyboards, set top boxes, POS terminals, laptops, PDAs, mobile phones, and energy meters. INSIDE also offers standalone smart card interface chips to complete its reader solutions.

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



Key Features

Contact Smart Card Readers

- ROM and Flash-based from 16KB to 64 KB
- 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

Contactless Smart Card Readers

- Standalone RF Front end
- Combined with Contact IC for Dual Readers

Contact Reader ICs

8051-based Smart Card Reader ICs

These 8-bit controllers offer serial interfaces and ISO 7816 interfaces, while several product members also provide seven-endpoint USB control.

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, INSIDE AT90SCR100 and AT90SCR050 microcontrollers are pre-certified to all relevant industry standards, including EMV2000, 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:

- 8051-based controllers pre-configured with GemCore software from Gemalto, or OmniKey from HID Global
- 8-/16-bit RISC controllers pre-configured with INSIDE Software

Smart Card Interfaces

The AT83C26 is a multiple (up to 5) smart card reader interface IC for smart card reader/writer applications such as EFT/POS terminals and set top boxes. It enables the management of any type of smart card from any kind of host. Up to 4 AT83C26 can be connected in parallel thanks to the programmable TWI address.

Reference Designs and Tools

For 8051 microcontrollers, reference design kits developed with Omnikey® and Gemalto®, enable the easy implementation of pre-certified and ready-to-use solutions AT89RFD-02 (USB interface) and AT89RFD-05 (Serial Interface).

For 8-/16-bit RISC microcontrollers, the AT90SCR100MEB allows you to quickly interface with the AT90SCR products in various host environments. It includes high-level software libraries and a powerful scripting tool to easily design and integrate your smart card reader application. When completed with a daughter board integrating both finger sensor and ISO-14443 contactless interface, this kit becomes the suitable companion to build any type of biometric and/or contact/contactless smart card reader.

	AT183C21GC14A	AT183R5122	AT189C5122D	AT183C22OK	AT183C5123	AT183C22OK203	AT183C5127	AT190SCR050	AT190SCR050HFW	AT190SCR100HFW	AT190SCR100	AT183C25OK	AT183C26	
	Serial	USB interface										Serial & USB interface	PCMCIA	Level Shifter
Microcontroller														
FLASH (KB)			32	32							64			
ROM (KB)		32				30		16	16					
CORE	C51	C51	C51	C51	C51	C51	C51	8/16 bit Risc	8/16 bit Risc	8/16 bit Risc	8/16 bit Risc	C51		
Firmware	Gemalto			Omnikey		Omnikey		INSIDE	INSIDE	INSIDE		Omnikey		
Performance	16 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz	48 MHz		
Serial Interface														
USB Device Endpoints		7	7	7	5	5	5	8	8	8	8			
USB Host Endpoints										4	4			
UART	1	1	1	1	1	1	1	1	1	1	1			
SPI		1	1	1						1	1			
High Speed SPI										1	1			
Analog Interface	1	1	1	1	1	1	1	1	1	1	1	1	2+3SAM	
Card Interface														
Digital Interface	1	1	1	1	1	1	1					1		
Alternate Card		✓	✓		✓		✓	✓						
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	60mA	
1,8V Mode	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	35mA	
Voltage Supervisor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Other Features														
I/O Ports (LED)	14(2)	46(7)	46(7)	(2)	13/17(4)	(2)	13/17(4)	(1)	(1)	38(4)	38(4)			
Power Supply (V)	2.85-5.5	3.0-5.5	3.0-5.5	3.0-5.5	3.0-5.5	3.0-5.5	3.0-5.5	2.7-5.5	2.7-5.5	2.7-5.5	2.7-5.5			
Crypto Engine										AES/RNG	AES/RNG			
Packages	SSOP24 QFN32	QFP64 QFN64	QFP64 QFN64	QFP64 QFN64	QFP32 QFN32	QFP32 QFN32	QFP32 QFN32	QFN28 QFN24* Die	QFN28 QFN24* Die	QFN64 QFP64* QFN32	QFN64 QFP64* QFN32	QFP64 QFN64	QFP48 QFN48	

*on specific request

Contactless Reader ICs

The PicoRead® product suite represents the next contactless chips that enable any consumer electronic device to function as a reader. The PicoRead chipset's small footprint simplifies integration with host devices, reducing development costs and accelerating time to market for new services and applications.

PicoRead ChipSet Features

- Cryptographic security management
- Plug-and-play capability
- Serial host interface UART/ISO 7816
- 250-byte communication buffer
- Additional memory for application download



Features

- Interoperable with ISO 14443 A&B and ISO 15693 (including SONY protocol)
- Operating distance up to 10cm, depending on antenna
- Baud rates: 106kbps to 424kbps
- Low power consumption: 20mA in active mode, 50µA in standby mode
- Small footprint (SSOP16)
- Automatic card detection in standby mode (using a few external components)
- Evaluation kit available

For more information about INSIDE Secure Smart Card Readers, please visit www.insideseure.com

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