



➤ Smart Card Readers ICs

SYSTEM-ON-CHIP AND SMART CARD INTERFACES

Integrated Solutions Compliant with Major Industry Standards

For over 20 years, Atmel has been a leading designer and manufacturer of advanced integrated circuits (ICs) for advanced smart card readers and embedded security applications.

Designed in partnership with industry leaders, these one-chip solutions address any application using a serial, USB or PCMCIA smart card reader including keyboards, set top boxes, point of sales terminals (POS), laptops, UMPC, PDAs, mobile phones and energy meters. Compliant with major industry standards, they provide easy-to-implement and highly integrated solutions.

Key Features

- Flash and ROM Solution
- USB device and Host Interface
- SPI High Speed up to 24 Mbps
- Smart Card Interface (3 cycles/ETU)
- Low Power Consumption
- Remote Wake-up Functionality
- Cryptographic Capability
- Dedicated Software
FSL, Bootloader, Demo

Applications

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



Product Offering

	Serial Interface			USB Interface						Serial & USB Interface		Level Shifter		
	AT89C5121	AT89C5121	AT89C21GC	AT89R5122	AT89C5122	AT89C22OK	AT89C5123	AT89C22OK	AT89C5127	AT90SCR080	AT90SCR100	AT89C26	AT89C24	
Microcontroller														
Flash (KB)	16			32			32			64				
ROM (KB)	16			32			30			16				
Core	C51			C51			C51			AVR		AVR		
Firmware	Gemalto			Omnikey			Omnikey							
Performance	16MHz	16MHz	16MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz	48MHz			
Serial Interface														
USB Device Endpoints				7	7	7	5	5	5	8	8			
USB Host Endpoints										4				
UART	1	1	1	1	1	1	1	1	1	1	1			
SPI				1	1	1				1				
High Speed SPI										1				
Analog Interface	1	1	1	1	1	1	1	1	1	1	1	2+3SAM	1	
Card Interface														
Digital Interface	1	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			
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)	14(2)	14(2)	46(7)	46(7)	(2)	13/17(4)	(2)	13/17(4)	(1)	38(4)			
Power Supply (V)	2.85-5.5	2.85-5.5	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				
Crypto Engine										AES/RNG				
Packages	SSOP24	SSOP24	SSOP24	QFP64	QFP64	QFP64	QFP32	QFP32	QFP32	QFN28	QFN64*	QFP48	QFN28	
				QFN64	QFN64	QFN64	QFN32	QFN32	QFN32	QFN24**	QFP64**	QFN48	SO28	
												QFN32		

* available on 64 pin package

** on request

Reference Designs and Tools

Reference design kits, developed in partnership with Omnikey® and Gemalto®, enable the easy implementation of pre-certified and ready-to-use solutions: AT89RFD-02 (USB Interface), AT89RFD-05 (Serial Interface) and AT89RFD-06 (PCMCIA). Starter Kits and emulators are also available for customers who would like to develop their own applications.



More information on:

www.atmel.com/products/SCR

Disclaimer: The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products, EXCEPT AS SET FORTH IN ATMEL'S TERMS AND CONDITIONS OF SALES LOCATED ON ATMEL'S WEB SITE. ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Unless specifically provided otherwise, Atmel products are not eligible for, and shall not be used in, automotive applications. Atmel's products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

Headquarters

Atmel Corporation
2325 Orchard Parkway
San Jose, CA 95131
USA
Tel: (1) 408 441-0311
Fax: (1) 408 487-2600

International

Atmel Asia
Unit 01-05 & 16, 19/F
BEA Tower, Millennium City 5
418 Kwun Tong Road
Kwun Tong, Kowloon
Hong Kong
Tel: (852) 2245-6100
Fax: (852) 2722-1369

Atmel Europe

Le Krebs
8 Rue Jean-Pierre Timbaud
BP 309
78054 St Quentin-en-Yvelines
Cedex
France
Tel: (33) 1-30-60-70-00
Fax: (33) 1-30-60-71-11

Atmel Japan

9F, Tonetsu Shinkawa Bldg.
1-24-8 Shinkawa
Chuo-ku, Tokyo 104-0033
Japan
Tel: (81) 3-3523-3551
Fax: (81) 3-3523-7581

Product Contact

Product Line
SCR@atmel.com

Literature Requests
www.atmel.com/literature

Web Site
www.atmel.com

© 2009 Atmel Corporation.
All rights reserved.

Atmel®, Atmel logo and combinations thereof, AVR® and others are registered trademarks or trademarks of Atmel Corporation or its subsidiaries. Other terms and product names may be trademarks of others.

Rev.: 6573B-SMS-10/09 2K

