

Features

General

- High-performance, Low-power AVR™ Enhanced RISC Architecture
 - 120 Powerful Instructions (Most Executed in a Single Clock Cycle)
- Low Power Idle and Power-down Modes
- Bond Pad Locations Conforming to ISO 7816-2
- ESD Protection to $\pm 6000V$
- Operating Ranges: 1.62 to 5.5V
- Compliant with GSM, 3GPP and EMV 2000 Specifications; PC Industry Compatible
- Available in Wafers, Modules, and Industry-standard Packages

Memory

- 64K Bytes of ROM Program Memory
- 36K Bytes of EEPROM, Including 128 OTP Bytes and 384-byte Bit-addressable Area
 - 1 to 128-byte Program / Erase
 - 1 ms Program / 1 ms Erase
 - Typically More than 500,000 Write/Erase Cycles at a Temperature of 25°C
 - 10 Years Data Retention
- 2K Bytes of RAM

Peripherals

- One I/O Port
 - Configurable to Support Communication Protocol Including ISO7816-3
- 16-bit Timer
- Random Number Generator (RNG)
- 2-level, 8-vector Interrupt Controller

Security

- Advanced Protection Against Physical Attack
- Environmental Protection Systems
- Voltage Monitor
- Secure Memory Management/Access Protection (Supervisor Mode)
- SPA/DPA Counter Measure

Development Tools

- Voyager Emulation Platform (ATV2 Standard) to Support Software Development
- IAR Systems EWAVR® V3.10 Debugger or Atmel's AVR Studio® Version 4.07 or Above
- Software Libraries and Application Notes



Secure Microcontroller for Smart Cards

AT90SC 6436RT Summary

6505AS-SMIC-30Mar04



Note: This is a summary document. A complete document will be available under NDA. For more information, please contact your local Atmel sales office.

Description

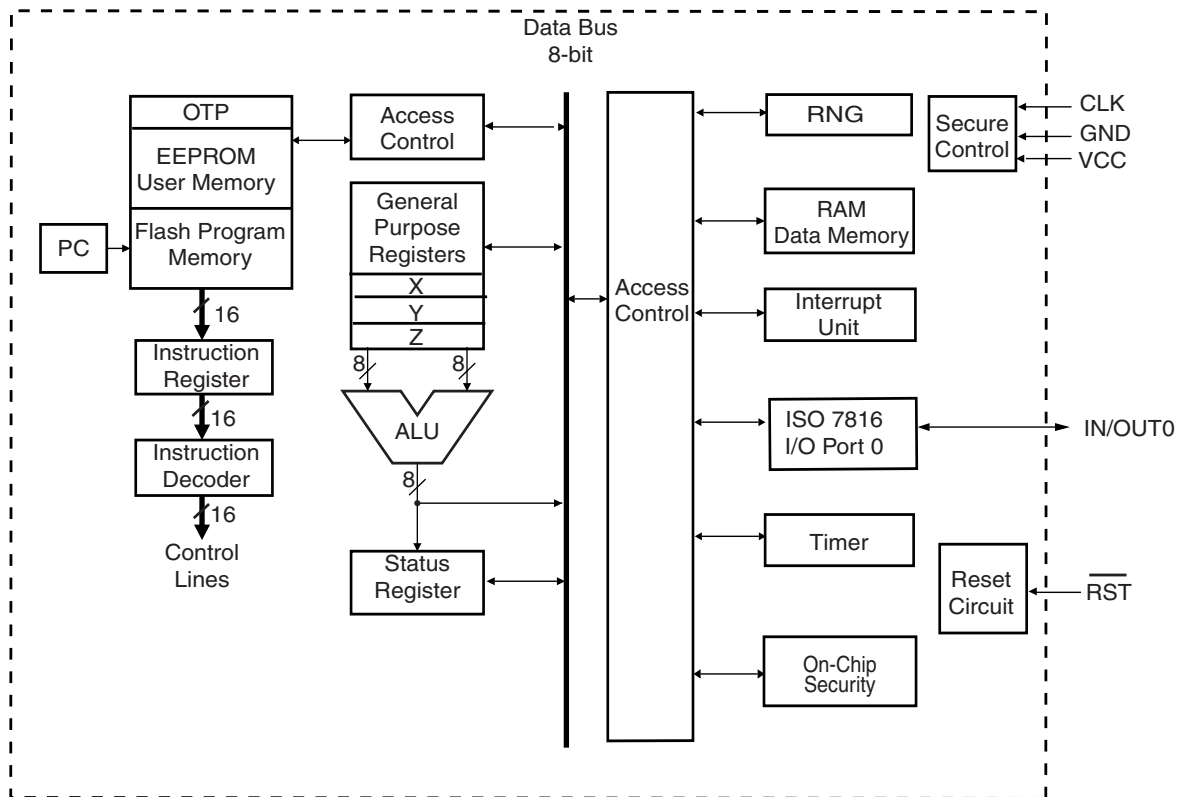
The AT90SC6436RT is a low power, high performance, 8/16-bit microcontroller based on the AVR™ enhanced RISC architecture, with flexible ROM program memory and EEPROM data memory. By executing powerful instructions in a single clock cycle, the AT90SC6436RT achieves throughputs close to 1 MIPS per Mhz. Its Harvard architecture includes 32 general-purpose working registers directly connected to the ALU, allowing two independent registers to be accessed in one single instruction executed in one clock cycle.

The ability to map the EEPROM in the code space allows parts of the program memory to be reprogrammed in-system. This technology combined with the versatile 8/16-bit CPU on a monolithic chip provides a highly flexible and cost-effective solution to many smartcard applications.

The AT90SC6436RT can also be configured to offer compatibility with the AT90SC6432R.

Figure 1 shows the AT90SC6436RT block diagram.

Figure 1. AT90SC6436RT secureAVR Enhanced RISC Architecture





Atmel Corporation

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

Regional Headquarters

Europe

Atmel Sarl
Route des Arsenaux 41
Case Postale 80
CH-1705 Fribourg
Switzerland
Tel: (41) 26-426-5555
Fax: (41) 26-426-5500

Asia

Room 1219
Chinachem Golden Plaza
77 Mody Road Tsimshatsui
East Kowloon
Hong Kong
Tel: (852) 2721-9778
Fax: (852) 2722-1369

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

Atmel Operations

Memory

2325 Orchard Parkway
San Jose, CA 95131, USA
Tel: 1(408) 441-0311
Fax: 1(408) 436-4314

Microcontrollers

2325 Orchard Parkway
San Jose, CA 95131, USA
Tel: 1(408) 441-0311
Fax: 1(408) 436-4314

La Chantrerie
BP 70602
44306 Nantes Cedex 3, France
Tel: (33) 2-40-18-18-18
Fax: (33) 2-40-18-19-60

ASIC/ASSP/Smart Cards

Zone Industrielle
13106 Rousset Cedex, France
Tel: (33) 4-42-53-60-00
Fax: (33) 4-42-53-60-01

1150 East Cheyenne Mtn. Blvd.
Colorado Springs, CO 80906, USA
Tel: 1(719) 576-3300
Fax: 1(719) 540-1759

Scottish Enterprise Technology Park
Maxwell Building
East Kilbride G75 0QR, Scotland
Tel: (44) 1355-803-000
Fax: (44) 1355-242-743

RF/Automotive

Theresienstrasse 2
Postfach 3535
74025 Heilbronn, Germany
Tel: (49) 71-31-67-0
Fax: (49) 71-31-67-2340

1150 East Cheyenne Mtn. Blvd.
Colorado Springs, CO 80906, USA
Tel: 1(719) 576-3300
Fax: 1(719) 540-1759

Biometrics/Imaging/Hi-Rel MPU/ High Speed Converters/RF Datacom

Avenue de Rochepleine
BP 123
38521 Saint-Egreve Cedex, France
Tel: (33) 4-76-58-30-00
Fax: (33) 4-76-58-34-80

Literature Requests

www.atmel.com/literature

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6505AS-SMIC-30Mar04