
Errata

- **Bandgap Reference Stabilizing Time**
- **Brown-out Detection Level**
- **Serial Programming at Voltages below 2.9V**
- **UART Loses Synchronization if RXD Line is Low when UART Receive is Disabled**

4. **Bandgap Reference Stabilizing Time**

The time for the internal voltage reference for the Analog Comparator to stabilize is longer than specified. The stabilizing period starts after the bandgap reference has been selected, and can go on for as much as 10 seconds.

Problem Fix/Workaround

The Band-gap reference will be stable immediately if the internal Brown-out Detector is enabled.

3. **Brown-out Detection Level**

The Brown-out Detection level can increase when there is heavy I/O-activity on the device. The increase can be significant when some of the I/O pins are driving heavy loads.

Problem Fix/Workaround

Select a V_{CC} well above the Brown-out Detection level.

Avoid loading I/O ports with high capacitive or resistive loads.

2. **Serial Programming at Voltages below 2.9V**

At voltages below 2.9V, serial programming might fail.

Problem Fix/Workaround

Keep V_{CC} at 2.9V or higher during In-System Programming.

1. **UART Loses Synchronization if RXD Line is Low when UART Receive is Disabled**

The UART will detect a UART start bit and start reception even if the UART is not enabled. If this occurs, the first byte after re-enabling the UART will be corrupted.

Problem Fix/Workaround

Make sure that the RX line is high at start-up and when the UART is disabled. An external RS232-level converter keeps the line high during start-up.



8-bit AVR[®]
Microcontroller
with 4K Bytes
In-System
Programmable
Flash

AT90S/LS4433
Rev. C
Errata Sheet





Atmel Headquarters

Corporate Headquarters

2325 Orchard Parkway
San Jose, CA 95131
TEL (408) 441-0311
FAX (408) 487-2600

Europe

Atmel U.K., Ltd.
Coliseum Business Centre
Riverside Way
Camberley, Surrey GU15 3YL
England
TEL (44) 1276-686-677
FAX (44) 1276-686-697

Asia

Atmel Asia, Ltd.
Room 1219
Chinachem Golden Plaza
77 Mody Road Tsimhatsui
East Kowloon
Hong Kong
TEL (852) 2721-9778
FAX (852) 2722-1369

Japan

Atmel Japan K.K.
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

Atmel Colorado Springs

1150 E. Cheyenne Mtn. Blvd.
Colorado Springs, CO 80906
TEL (719) 576-3300
FAX (719) 540-1759

Atmel Rousset

Zone Industrielle
13106 Rousset Cedex
France
TEL (33) 4-4253-6000
FAX (33) 4-4253-6001

Fax-on-Demand

North America:

1-(800) 292-8635

International:

1-(408) 441-0732

e-mail

literature@atmel.com

Web Site

<http://www.atmel.com>

BBS

1-(408) 436-4309

© Atmel Corporation 1999.

Atmel Corporation makes no warranty for the use of its products, other than those expressly contained in the Company's standard warranty which is detailed in Atmel's Terms and Conditions located on the Company's web site. The Company assumes no responsibility for any errors which may appear in this document, reserves the right to change devices or specifications detailed herein at any time without notice, and does not make any commitment to update the information contained herein. No licenses to patents or other intellectual property of Atmel are granted by the Company in connection with the sale of Atmel products, expressly or by implication. Atmel's products are not authorized for use as critical components in life support devices or systems.

Marks bearing ® and/or ™ are registered trademarks and trademarks of Atmel Corporation.

Terms and product names in this document may be trademarks of others.



Printed on recycled paper.

1280C-12/99/xM