

Active Errata List

- During UART Reception, Clearing REN May Generate Unexpected IT
- Timer 2 – Baud Rate Generator – Long Start Time
- C51 Core – Bad Exit of Power-down in X2 Mode
- PCA – Incorrect Behavior with CPU X2 Mode Bit of HSB
- Timer0/1 – Extra Interrupt
- Boot process - Upper 2Kbytes execution with BLJB=0
- Flash/EEPROM - First Read after Load Disturbed

Errata History

Lot Number	Errata List
All	1, 2, 3, 4, 5, 6, 7

Errata Descriptions

1. During UART Reception, Clearing REN May Generate Unexpected IT

During UART reception, if the REN bit is cleared between start bit detection and the end of reception, the UART will not discard the data (RI is set).

Workaround

Test REN at the beginning of Interrupt routine directly after CLR RI, and run the Interrupt routine code only if REN is set.

2. Timer 2 – Baud Rate Generator – Long Start Time

When Timer 2 is used as a baud rate generator, TH2 is not loaded with RCAP2H at the beginning, then UART is not operational before 10,000 machine cycles.

Workaround

Add the initialization of TH2 and TL2 in the initialization of Timer 2.

3. C51 Core – Bad Exit of Power-down in X2 Mode

When exiting power-down mode by interrupt while CPU is in X2 mode, it leads to bad execution of the first instruction run when CPU restarts.

Workaround

Set the CPU in X1 mode directly before entering power-down mode.

4. PCA – Incorrect behavior with CPU X2 mode bit of HSB

When starting the microcontroller in X2 mode upon reset with the X2 fuse bit of the HSB, the PCA may not work properly when configured with Timer 0 in X1 mode as clock input.

Workaround

Set the CPU in X2 mode by software by writing CKCON register at the begin of the application.

5. Timer0/1 – Extra Interrupt

When Timer0 is in X1 mode and Timer1 in X2 mode and vice versa, extra interrupt may randomly occur for Timer0 or Timer1.

Workaround



80C51 MCUs

AT89C51RD2

AT89C51ED2

Errata Sheet

4257E–8051–08/07



Use the same mode for the two timers..

6. Boot Process - Upper 2Kbytes Execution with BLJB = 0

In case of Boot process with BLJB = 0 and BSB = 00, the User Application is executed but the program space located in the upper 2KBytes of the 64KBytes on chip Flash memory cannot be executed. This is due to ENBOOT bit which is set in this Bootloader flow.

Workaround

Clear ENBOOT bit at the beginning of user application software.

7. Flash/EEPROM - First Read after Load Disturbed

In the 'In-Application Programming' mode from the Flash, if the User software application loads the Column Latch Area prior to calling the programming sequence in the UART Bootloader.

The 'Read after load' issue leads to a wrong Opcode Fetch during the column latch load sequence.

Workaround

Update of the Flash API Library. A NOP instruction has to be inserted after the load instruction.

```
MOVX @DPTR,A ;Load Column latches
```

```
NOP ; ADDED INSTRUCTION
```

Active UART Bootloader Errata List

- API program Data Byte - Incorrect Return Value
- API program Data Page - Incorrect Return Value

UART Bootloader Errata History

Version Number	Errata List
0.0 (1.0.0 displayed by FLIP)	1,2

UART Bootloader Errata Description

1. API Program Data Byte - Incorrect Return Value

The PROGRAM DATA BYTE API returns the '0xXX' instead of 0x00 in ACC, but the programmig operation is sucessfully completed.

2. API Program Data Page- Incorrect Return Value

The PROGRAM DATA PAGE API returns the '0xXX' instead of 0x00 in ACC, but the programmig operation is sucessfully completed.



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

Avenue de Rochepleine
BP 123
38521 Saint-Egreve Cedex, France
Tel: (33) 4-76-58-47-50
Fax: (33) 4-76-58-47-60

Literature Requests

www.atmel.com/literature

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 SALE 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 suitable 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.

©2007 Atmel Corporation. All rights reserved. Atmel®, logo and combinations thereof, and Everywhere You Are® are the trademarks or registered trademarks, of Atmel Corporation or its subsidiaries. Other terms and product names may be trademarks of others.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[AT89C51ED2-RLRUM](#) [AT89C51ED2-SMRUM](#) [AT89C51RD2-RLRUM](#) [AT89C51RD2-RLTUM](#) [AT89C51ED2-RLTUM](#)