

Errata

- PWM not Phase Correct
- Increased Interrupt Latency
- Interrupt Return Fails when Stack Pointer Addresses the External Memory
- Writing UBRRH Affects both UART0 and UART1
- Store Program Memory Instruction May Fail

5. PWM not Phase Correct

In Phase-correct PWM mode, a change from OCRx = TOP to anything less than TOP does not change the OCx output. This gives a phase error in the following period.

Problem Fix/Workaround

Make sure this issue is not harmful to the application.

4. Increased Interrupt Latency

In this device, some instructions are not interruptable, and will cause the interrupt latency to increase. The only practical problem concerns a loop followed by a two-word instruction while waiting for an interrupt. The loop may consist of a branch instruction or an absolute or relative jump back to itself like this:

```
loop: rjmp loop  
<Two-word instruction>
```

In this case, a dead-lock situation arises.

Problem Fix/Workaround

In assembly, insert a nop instruction immediately after a loop to itself. The problem will normally be detected during development. In C, the only construct that will give this problem is an empty “for” loop; “for(;;)”. Use “while(1)” or “do{} while (1)” to avoid the problem.

3. Interrupt Return Fails when Stack Pointer Addresses the External Memory

When stack pointer addresses external memory (SPH:SPL > \$45F), returning from interrupt will fail. The program counter will be updated with a wrong value and thus the program flow will be corrupted.

Problem Fix/Workaround

Address the stack pointer to internal SRAM or disable interrupts while stack pointer addresses external memory.

2. Writing UBRRH Affects Both UART0 and UART1

Writing UBRRHI updates baud rate generator for both UART0 and UART1. The baud rate generator's counter is updated each time either UBRR or UBRRHI are written. Since the UBRRHI register is shared by UART0 and UART1, changing the baud rate for one UART will affect the operation of the other UART.

Problem Fix/Workaround

Do not update UBRRHI for one UART when transmitting/receiving data on the other.

1. Store Program Memory Instruction May Fail

At certain frequencies and voltages, the store program memory (SPM) instruction may fail.

Problem Fix/Workaround

Avoid using the SPM instruction



8-Bit **AVR**[®]
Microcontroller
with 16K Bytes
Flash

ATmega161(L)
Rev. E

Errata Sheet

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Atmel Headquarters

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

Europe

Atmel SarL
Route des Arsenaux 41
Casa Postale 80
CH-1705 Fribourg
Switzerland
TEL (41) 26-426-5555
FAX (41) 26-426-5500

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 Product Operations

Atmel Colorado Springs

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

Atmel Grenoble

Avenue de Rochepleine
BP 123
38521 Saint-Egreve Cedex, France
TEL (33) 4-7658-3000
FAX (33) 4-7658-3480

Atmel Heilbronn

Theresienstrasse 2
POB 3535
D-74025 Heilbronn, Germany
TEL (49) 71 31 67 25 94
FAX (49) 71 31 67 24 23

Atmel Nantes

La Chantrerie
BP 70602
44306 Nantes Cedex 3, France
TEL (33) 0 2 40 18 18 18
FAX (33) 0 2 40 18 19 60

Atmel Rousset

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

Atmel Smart Card ICs

Scottish Enterprise Technology Park
East Kilbride, Scotland G75 0QR
TEL (44) 1355-357-000
FAX (44) 1355-242-743

e-mail

literature@atmel.com

Web Site

<http://www.atmel.com>

BBS

1-(408) 436-4309

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