AVRTOOLS.PDF

June, 2000

This file contains the latest information about the AVR Development Tools. AVRTOOLS.PDF is updated regularly and can be downloaded from Atmel Corporation web site www.atmel.com.

Currently, the following tools are covered by this document:

Software	SW Version	Note:
AVR Studio	3.10	Available free from www.atmel.com
AVR Assembler	1.30	Available free from www.atmel.com
Emulators	**SW Version**	**Note:**
ATICE10	1.00	
ATICE30	1.10	Update available from www.atmel.com
ATICE200	1.20	Update included in AVR Studio
AT90ICEPRO	1.31	Update included in AVR Studio
ATmegaICE	1.11	Update available from www.atmel.com

NEWS:

AVR Studio (r) Version 3.10 Released

AVR Studio version 3.10 is now released and available for download. This version corrects some bugs in the 3.0 version. For more information on changes and remaining issues read the included “ReleaseNotes.txt”file. (www.atmel.com)

ATICE30 1.10 Firmware update Released

An Upgrade Utility for ATICE30 is now available. This utility will upgrade an ATICE30 version 1.0 to version 1.10. For information on changes, and remaining issues read the included “release_notes.txt” file. The file is located in the AVR section of the Atmel Web Site (www.atmel.com)

Atmel AVR
Tools Device Support

	ATtiny11	ATtiny12	ATtiny15(L)	ATtiny22(L)	ATtiny28L/28V	AT90S1200	AT90S2313	AT90S/LS2323	AT90S/LS2343	AT90S/LS2333	AT90S4414	AT90S/LS4433	AT90S/LS4434	AT90S8515	AT90C8534	AT90S/LS8535	ATmega103(L)	ATmega161(L)	ATmega163(L)	Comments:
Starter Kits																				
MCU00100						✓	✓	✓			✓			✓						
STK100	✓	✓	✓	✓	✓															
STK200				✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
STK300																✓				
Emulation Tools																				
ATICE10	✓	✓	✓	✓	✓															
ATICE30																✓	✓	✓		
ATICE200	✓	✓				✓	✓			✓	✓	✓	✓	✓		✓				
AT90ICEPRO	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				
ATmegaICE																✓				Replaced by ICE30
In-System-Programmers																				
3rd Party [2]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Software Tools																				
Studio 3.10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
AVR Asm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IAR Asm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
AVRISP 2.65 [1-3]				✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			
AVRISP 3.3 [4]	✓	✓	✓	✓	✓					✓		✓								

Notes

[1] ATtiny22(L) can be programmed as an AT90S/LS2343
[2] See 3rd Part Vendors information on the Atmel Web site www.atmel.com
[3] Supports STK200 and STK300 Starter Kits
[4] Supports STK100 Starter Kit

AVR Studio Version: 3.10

1. FEATURES NOT SUPPORTED IN THE SIMULATOR:
   -Analog comparator.
   -ADC.
   -Watchdog timer.
   -Sleep modes.
   -SPM (acts as NOP)
   - Interrupt on "logical pin level change"
   -Timer1 on ATtiny15, ATmega161 and ATmega163. Asynchronous timer on ATmega103.

Timers for all parts, SPM, sleep and watchdog will be supported in Q2 2000.

The following issues exists

FILE EXTENSION ON PROJECT SOURCE FILES

Source files in AVR Studio® assembler projects must have a file extension

PROBLEM FIX/WORKAROUND

Give the source files an appropriate extension

I/O VIEW GRAHICS CORRUPTED

The I/O view graphics may get corrupted on Windows® 95A

PROBLEM FIX/WORKAROUND

Try to install Internet Explorer v4.0 or later. This package contain some modules missing in Windows® 95A.

IAR ASSEMBLY FILE WITH TABS

If an IAR Assembly file contains tabs, the source code marking during simulation/ emulation behaves strange.

PROBLEM FIX/WORKAROUND

Replace the tabs with spaces. This is available as an option in most editors.

XRAM SIMULATION

The Simulator can set up devices which supports external memory to simulate that 64KBytes is available, but this is regarded as internal memory with respect to timing and the use of the Ports.

PROBLEM FIX/WORKAROUND

No workaround.

UART SIMULATION

When typing a value into the UDR during simulation of a UART Receive interrupt, the value changes to 0x00 in the next clock cycle. The reason is that the UDR register is two physically separate registers sharing the same I/O address. When writing to the register, the UART Transmit Data register is written. When reading from UDR, the UART Receive Data register is read.

PROBLEM FIX/WORKAROUND

Start the interrupt execution by clicking the Receive Complete(RXC) Flag. Then, in the interrupt service routine, change the value in the register location into where the UDR has been read.

EXTERNAL LEVEL INTERRUPTS

In simulator the External Interrupt Flags may be set even if level interrupts are enabled. This is different from the actual parts.

PROBLEM FIX/WORKAROUND

The flags get automatically cleared when the interrupt condition disappears, so this will not cause any problems during simulation.

AVR Assembler Version: 1.30

AVR Assembler 1.30 (32bit version) is embedded in AVR Studio.

The following issues exists:

STRINGS PRECEDED BY CONSTANTS

When using the assembler to generate strings preceded by constants, the labels following may get wrong address.

PROBLEM FIX/WORKAROUND

This is a problem in the case where the number of preceding constants is odd, and the number of characters in the string is odd. Thus, the workaround is to make sure that either the number of constants is even, or that the length of the string is even.

ERROR MESSAGE: PSEUDO COMMAND IN MACRO DEFINITION NOT ALLOWED

Version 1.30 of the assembler has introduced stricter macro checking to eliminate the possibility of generating incorrect code.

PROBLEM FIX/WORKAROUND

Use older version of the assembler if the old macro functionality is required.

RJMP WITH OFFSET 0x800

When ‘Wrap Relative Jumps’ is enabled, and the jump is exactly 2K Words, the assembler fails with an error message ‘Relative jump out of reach’.

PROBLEM FIX/WORKAROUND

Insert one extra NOP instruction in front of the label where rjmp is jumping.

WINDOWS 95® CAUSING ASSEMBLER CRASH

On some installations of Windows 95(r), the assembler generates a General Protection Fault when opening.

PROBLEM FIX/WORKAROUND

Delete the 'wavrasm.ini' file before opening the assembler. Then select the option 'close all windows on exit'. Note 1: This is only necessary on installations that fail.

When using AVR Studio ver. 2.03 or later, your ICE200 will be upgraded to the latest version if needed. We recommend using AVR Studio ver. 2.03 or later with ICE200.

Following differences exists between the ATtiny12 device and ICE200 emulating ATtiny12:
- The internal RC oscillator is running at a nominal speed of 2MHz in ICE200. This is twice the frequency of the ATtiny12 device.
- Pin 1 on ATtiny12 is only emulated as reset or input in ICE200. In a real device it is also possible to use this pin as an open collector output.
- The Pull Uo Disable (PUD, MCUCR, bit6) bit in ATtiny12 is not supported. The Pull-ups can be dissabled manually by cleaing the appropriate bits in the Port B register

AT90S4433/2333 AT VOLTAGES BELOW 5V

When emulating AT90S2333/4433 with target voltage below 5V AVR Studio® may lose communication with the emulator

PROBLEM FIX/WORKAROUND

Avoid setting reset delay to " Ceramic Resonator" or "Crystal Oscillator". Instead select "Ceramic resonator, fast rising power" or "Crystal Oscillator, fast rising power". If emulator options dialoge is unavailable due to lost communication, delete the .avd file in your project directory, and open the project again. Then the options dialoge will appear

POWER SUPPLY

ICE200 will not function properly if a 9VAC power supply is used. Neither should a 12VDC supply be used due to the power dissipation/heat in the voltage regulator.

PROBLEM FIX/WORKAROUND

-Use a 9VDC power supply.

TIMER/COUNTER1 OUTPUT COMPAREA MATCH INTERRUPT

When single stepping the timers the Output Compare Flag 1A in TIFR is set on the transition between compare value and compare value+1. If the Clear Timer/Counter1 on Compare match control bit is set the Timer/Counter1 is reset to $0000 in the transition between compare value1 and compare value. This means that the timer is cleared before it reaches the point where the Output Compare Flag 1A is set. Therefore single stepping the timer when the Clear Timer/Counter1 on Compare match control bit is set will not set the Output Compare Flag 1A and the interrupt routine will not be executed.

Note This occurs only in single stepping mode. If the program executes a 2 cycle (or more) instruction during the compare match, the Output Compare Flag 1A will be set, and the associated interrupt routine will be executed. In run mode the timer behaves normally i.e. the Output Compare Flag 1A in TIFR is set regardless of the Clear Timer/Counter1 on Compare match control bit's value.

PROBLEM FIX/WORKAROUND

When single stepping timers the flags in Timer/Counter Interrupt Flag Register (TIFR) can be set or cleared manually. Setting the Output Compare Flag 1A manually will cause the program to jump to the associated interrupt vector and execute the interrupt routine.

INTERRUPT FLAGS

Normally writing a 1 to a flag will clear it, so manually setting of flags is impossible. When single stepping timers the Timer/Counter1 interrupt flags can be set manually using the AVR Studio IO view.

PROBLEM FIX/WORKAROUND

Writing a 1 to the flags in software can not set them, even when single stepping. Doing this will clear the flags as normal. The manual setting of Timer interrupt flags can only be done from AVR Studio's IO view, and only in timer single stepping mode.

ICEPRO Version: 1.31

If you have already installed a version with trace support, version 1.31 can be installed from AVR STUDIO.
Note: this will only work for emulators with support for trace-buffer.

ICEPRO owners without trace-buffer support can order a free update kit from the nearest sales office.

Installing version 1.31 will correct the following problems from earlier versions:

-ICEPRO output levels.
-SRAM memory view and edit of AT90S2313.
-Global interrupt flag gets cleared.
-Failure running the SPI
-Read external memory from AVR studio.
-UART of AT90S8515.
-SPI of AT90S8515.

Installing version 1.31 and three additional straps described in the upgrade document "Modifying AT90ICEPRO to support emulation of AT90S8535" will correct the following problems:

-EEPROM interrupt of AT90S8535 never occurs.
-ADC interrupt of AT90S8535 never occurs.
-Analog comparator interrupt of AT90S8535 never occurs.
-Spurious interrupts when emulating AT90S8535 or AT90S4434.

Emulation of tiny devices differs from actual device in 3 ways:

1. No HW stack. A stack can be set up in SRAM like this:

```
ldi     r16,0x65
out   0x3D,r16
```

2. IR special function pin of ATtiny28 can sink 16 mA in ICEPRO (24 mA in device).
3. Instructions valid in AT90S8515, but not in tiny devices will work in this emulator.

WATCHDOG RESET FROM SLEEP

When emulating 2333, 4433, 4434 or 8535, the watchdog reset timeout is not waking up the emulator from sleep. No reset is performed.

PROBLEM FIX/WORKAROUND

- No known workaround

EMULATING INTERNAL VOLTAGE REFERENCE

Internal Reference Voltage is not supported in the emulator when emulating tiny12, 2333 and 4433.

PROBLEM FIX/WORKAROUND

- No known workaround

READING ADC DATA REGISTER IMMEDIATELY AFTER THE ADSC BIT IS CLEARE

Reading ADC Data Register immediately after the ADSC bit in ADCSR is cleared will give the result of the latest conversion in the ICEPRO. In the actual device, the result of the previous conversion is read.

PROBLEM FIX/WORKAROUND

- No Known Workaround.
-The situation can be avoided by polling on the ADIF flag before reading the result of the conversion.

RESETTING THE WATCHDOG TIMER MAY NOT WORK AT HIGH FREQUENCIES

WDR is only held for one Fclk cycle, which will be too short for the 1MHz watchdog circuitry if the emulator is running at high speed.

PROBLEM FIX/WORKAROUND

Issue two or more consecutive WDR commands (one WDR per MHz to be safe).

ERROR RESETTING EMULATOR

In the emulator, the external reset line needs to be low 250 clock cycles before the reset is executed. In the actual device 50 ns is sufficient.

PROBLEM FIX/WORKAROUND

No known workaround.

ALE NOISE ON EXTERNAL MEMORY INTERFACE

Due to ALE noise on the External memory interface, random addresses in external RAM can be altered.

PROBLEM FIX/WORKAROUND

-Decouple the ALE line with a capacitor. Frequencies above 50 MHz should be filtered. Use 680pF as a start value.

PROBLEMS WITH RUNNING FROM EXTERNAL XTAL

Due to long wires, it can be a problem to run the ICEPRO from an external XTAL.

PROBLEM FIX/WORKAROUND

-On emulators with AT90ADCPOD, use the crystal socket on the pod. If necessary, upgrade to this pod.
-In many applications, it is possible to run on the internal clock. If the AVR clock is needed in the target application, this signal can be found on the logic analyzer connector. The internal clock is selectable between 400khz and 20Mhz

THE SPI FAILS IN SLAVE MODE

In some ICEPROs the SPI gets out of synchronization due to noise on the /SS pin.

PROBLEM FIX/WORKAROUND

No known workaround.

FAIL TO TRACE INTO AND RUN TO CURSOR FAIL AFTER FREQUENCY CHANGE.

Changing the frequency in the emulator can cause 'Trace Into' and 'Run to cursor' to fail.

PROBLEM FIX/WORKAROUND

Close the project and reopen for the frequency change to take effect, and the breakpoints to behave correctly.

WATCHDOG RESET FROM SLEEP SWITCH CORE

When repeatedly waking the AT90S8515 from idle sleep mode using the watchdog time-out, the emulator sometimes changes to AT90S1200 core.

PROBLEM FIX/WORKAROUND

-When the core has been changed, change configuration in Emulator options to restore the AT90S8515 core.
-To avoid core change, avoid watchdog time-out resets when in sleep mode.

WATCHDOG RESET PERIOD

The watchdog time-out can vary from the value defined in WDTCR. The watchdog will reset the part early or late, in steps of ±16 ms from the selected time-out.

PROBLEM FIX/WORKAROUND

When selecting time-out period, add margin for the variations in watchdog time-out.

APPLICATION RESET DURING ICE RESET

When the application reset is active (low) during ICEPRO reset, the ICEPRO will not reset properly.

PROBLEM FIX/WORKAROUND

- Ensure that the application reset is inactive (high) during ICEPRO reset.

TRISTATING OF I/O-LINES

When I/O lines are tristated, there still remains a weak pullup of approximately 1 M? to VCC.

PROBLEM FIX/WORKAROUND

In a 5V system the pull-up resistors can be removed. For further information, contact avr@atmel.com.

RESET TIED TO VCC

On emulators without the AT90ADCPOD, the emulator is not able to reset when the /RESET line is tied directly to VCC.

PROBLEM FIX/WORKAROUND

- Upgrade to the AT90ADCPOD.
- Connect ICEPRO /RESET to application /RESET through a schottky diode.
- Use a pull-up resistor between /RESET and VCC

EEPROM WRAP OF AT90S4414

The AT90S4414 EEPROM wraps around at 512 bytes, not at 256 as in the actual device.

PROBLEM FIX/WORKAROUND

Avoid writing the EEARH-register.

megaICE Version: 1.11

Installing version 1.11 will correct the following problems:
-Resetting the watchdog timer may not work at high frequencies
-The output levels from the MEGAICE are TTL levels

The following issues still exist:

ERROR RESETTING EMULATOR

In the emulator, the external reset line needs to be low 250 clock cycles before the reset is executed. In the actual device 50 ns is sufficient.

PROBLEM FIX/WORKAROUND

No known workaround.

ALE NOISE ON EXTERNAL MEMORY INTERFACE

Due to ALE noise on the External memory interface, random addresses in external RAM can be altered.

PROBLEM FIX/WORKAROUND

-Decouple the ALE line with a capacitor. Frequencies above 50 MHz should be filtered. Try using 680pF as a start value.

PROBLEMS WITH RUNNING FROM EXTERNAL XTAL

Due to long wires, it can be a problem to run the emulator from an external XTAL.

PROBLEM FIX/WORKAROUND

-In many applications, it is possible to run on the internal clock. If the AVR clock is needed in the target application, this signal can be found on the logic analyzer connector.
-It is also possible to shorten the wires by placing the crystal on the POD. On the megaICE, the crystal (or a socket) has to be soldered directly on the pod.

THE SPI FAILS IN SLAVE MODE

In some emulators the SPI gets out of synchronization due to noise on the /SS pin.

PROBLEM FIX/WORKAROUND

No known workaround.

FAIL TO TRACE INTO AND RUN TO CURSOR

Changing the frequency in the emulator can cause 'Trace Into' and 'Run to cursor' to fail.

PROBLEM FIX/WORKAROUND

Close the project and reopen for the frequency change to take effect, and the breakpoints to behave correctly.

WATCHDOG RESET PERIOD

The watchdog time-out can vary from the value defined in WDTCR. The watchdog will reset the part early or late, in steps of ±16 ms from the selected time-out.

PROBLEM FIX/WORKAROUND

When selecting time-out period, add margin for the variations in watchdog time-out.

APPLICATION RESET DURING ICE RESET

When the application reset is active (low) during emulator reset, the emulator will not reset properly.

PROBLEM FIX/WORKAROUND

Ensure that the application reset is inactive (high) during ICEPRO reset.

TRISTATING OF I/O-LINES

When I/O lines are tristated, there still remains a weak pull-up of approximately 1 Mohm to VCC.

PROBLEM FIX/WORKAROUND

In a 5V system the pull-up resistors can be removed. For further information, contact avr@atmel.com.

RESET TIED TO VCC

The emulator is not able to reset, when the /RESET line is tied directly to VCC.

PROBLEM FIX/WORKAROUND

Connect ICEPRO /RESET to application /RESET through a schottky diode.

Emulation of all devices except ATtiny22 differs from actual device in 3 ways:
1. No HW stack. A stack can be set up in SRAM like this:
   ldi r16,0x65
   out 0x3D,r16
2. IR special function pin of ATtiny28 can sink 16 mA in ICE10 (24 mA in device).
3. Instructions valid in AT90S8515, but not in tiny devices will work in this emulator.

The following issues exist:

EMULATING INTERNAL VOLTAGE REFERENCE

Internal Reference Voltage is not supported in the emulator when emulating tiny12.

PROBLEM FIX/WORKAROUND

- No known workaround

READING ADC DATA REGISTER IMMEDIATELY AFTER THE ADSC BIT IS CLEARED

Reading ADC Data Register immediately after the ADSC bit in ADCSR is cleared will give the result of the latest conversion in the ICE10. In the actual device, the result of the previous conversion is read.

PROBLEM FIX/WORKAROUND

- No Known Workaround.
-The situation can be avoided by polling on the ADIF flag before reading the result of the conversion.

RESETTING THE WATCHDOG TIMER MAY NOT WORK AT HIGH FREQUENCIES

WDR is only held for one Fclk cycle, which will be too short for the 1MHz watchdog circuitry if the emulator is running at high speed.

PROBLEM FIX/WORKAROUND

Issue two or more consecutive WDR commands (one WDR per MHz to be safe).

ERROR RESETTING EMULATOR

In the emulator, the external reset line needs to be low 250 clock cycles before the reset is executed. In the actual device 50 ns is sufficient.

PROBLEM FIX/WORKAROUND

No known workaround.

PROBLEMS WHEN RUNNING FROM EXTERNAL XTAL

Due to long wires, it can be a problem to run the ICE10 from an external XTAL.

PROBLEM FIX/WORKAROUND

-Use the crystal socket on the pod.
-In many applications, it is possible to run on the internal clock. If the AVR clock is needed in the target application, this signal can be found on the logic analyzer connector. The internal clock is selectable between 400khz and 20Mhz

TRACE INTO AND RUN TO CURSOR FAIL AFTER FREQUENCY CHANGE

Changing the frequency in the emulator can cause 'Trace Into' and 'Run to cursor' to fail.

PROBLEM FIX/WORKAROUND

Close the project and reopen for the frequency change to take effect, and the breakpoints to behave correctly.

WATCHDOG RESET PERIOD

The watchdog time-out can vary from the value defined in WDTCR. The watchdog will reset the part early or late, in steps of ±16 ms from the selected time-out.

PROBLEM FIX/WORKAROUND

When selecting time-out period, add margin for the variations in watchdog time-out.

APPLICATION RESET DURING ICE RESET

When the application reset is active (low) during ICEPRO reset, the ICEPRO will not reset properly.

PROBLEM FIX/WORKAROUND

- Ensure that the application reset is inactive (high) during ICEPRO reset.

TRISTATING OF I/O-LINES

When I/O lines are tristated, there still remains a weak pullup of approximately 1 Mohm to VCC. This does not apply for ATtiny15

PROBLEM FIX/WORKAROUND

In a 5V system the pull-up resistors can be removed. For further information, contact avr@atmel.com.

The following issues exist:

SKIP INSTRUCTION WITH INTERRUPTS

A skip instruction (SBRS, SBRC, SBIS, SBIC, CPSE) that skips a two-word instruction needs three clock cycles. If an interrupt occurs during the first or second clock cycle of this skip instruction, the return address will not be stored correctly on the stack. In this situation, the address of the second word in the two-word instruction is stored. This means that on return from interrupt, the second word of the two-word command will be decoded and executed as an instruction.

PROBLEM FIX/WORKAROUND

This is a core errata present in the ATmega103 device. Since the ATICE30 is based on the ATmega103 core, the bug will occure for all megaAVR devices in the ATICE30 emulator.
For C-programs, use the IAR compiler version 1.40b or later. The compiler will never generate the sequence. For assembly program, avoid skipping a two-word instruction if interrupts are enabled.
See ATmega103 erratasheet for more information

READING FUSES WITH LPM

For ATmega161 the Bootreset fuse is placed in fuse byte high (addr 0x03) bit 1 as in ATmega163. In a real device this fuse is located in fuse byte low (addr 0x00) bit 6

PROBLEM FIX/WORKAROUND

Read the BOOTRST fuse from fuse byte high bit 1

ANALOG COMPARATOR ON ATMEGA161

The bandgap reference on the analog comparator on ATmega161 is not supported in ICE30.

PROBLEM FIX/WORKAROUND

Use an external reference voltage.

XRAM INTERFACE ON ATMEGA161

Takes one extra clock cycle.

PROBLEM FIX/WORKAROUND

No known workaround.

ERROR RESETTING EMULATOR

In the emulator, the external reset line needs to be low 250 clock cycles before the reset is executed. In the actual device 50 ns is sufficient.

PROBLEM FIX/WORKAROUND

No known workaround.

ALE NOISE ON EXTERNAL MEMORY INTERFACE

Due to ALE noise on the External memory interface, random addresses in external RAM can be altered.

PROBLEM FIX/WORKAROUND

-Decouple the ALE line with a capacitor. Frequencies above 50 MHz should be filtered. Try using 680pF as a start value.

PROBLEMS WITH RUNNING FROM EXTERNAL XTAL

Due to long wires, it can be a problem to run the emulator from an external XTAL.

PROBLEM FIX/WORKAROUND

-In many applications, it is possible to run on the internal clock. If the AVR clock is needed in the target application, this signal can be found on the logic analyzer connector.
-It is also possible to shorten the wires by placing the crystal on the POD. On the megaPOD, the crystal (or a socket) has to be soldered directly on the pod.

THE SPI FAILS IN SLAVE MODE.

In some emulators the SPI gets out of synchronization due to noise on the /SS pin.

PROBLEM FIX/WORKAROUND

No known workaround.

FAIL TO TRACE INTO AND RUN TO CURSOR

Changing the frequency in the emulator can cause 'Trace Into' and 'Run to cursor' to fail.

PROBLEM FIX/WORKAROUND

Close the project and reopen for the frequency change to take effect, and the breakpoints to behave correctly.

WATCHDOG RESET PERIOD

The watchdog time-out can vary from the value defined in WDTCR. The watchdog will reset the part early or late, in steps of ±16 ms from the selected time-out.

PROBLEM FIX/WORKAROUND

When selecting time-out period, add margin for the variations in watchdog time-out.

APPLICATION RESET DURING ICE RESET

When the application reset is active (low) during emulator reset, the emulator will not reset properly.

PROBLEM FIX/WORKAROUND

Ensure that the application reset is inactive (high) during ICEPRO reset.

TRISTATING OF I/O-LINES

When I/O lines are tristated, there still remains a weak pull-up of approximately 1 Mohm to VCC. This does not apply when using the mega163pod (ATmega83 and ATmega163).

PROBLEM FIX/WORKAROUND

In a 5V system the pull-up resistors can be removed. For further information, contact avr@atmel.com.

RESET TIED TO VCC

When emulating ATmega103 or ATmega603, the emulator is not able to reset, when the /RESET line is tied directly to VCC.

PROBLEM FIX/WORKAROUND

Connect ICEPRO /RESET to application /RESET through schottky diode or use a pull-up between VCC and /RESET.