

Re: Warning on migrating to ATmega8515 – eeprom problem

Source: <http://coding.derkeiler.com/Archive/General/comp.arch.embedded/2004-11/0117.html>

From: jetmarc (jetmarc_at_hotmail.com)

Date: 11/03/04

Date: 3 Nov 2004 04:31:53 -0800

> *r10 is normally not used anyway by the IAR compiler.*

Caution! Unless you specifically instruct the compiler to not use r10, it DOES use it. An r10 is a must-preserve register, so even when you dont inline assembler but call externally linked assembler code, you must not scratch r10.

The compiler can be configured to not touch registers r15 and below. To keep clear r10, you effectively have to forbid usage of r10-r15. Note that you also have to recompile the runtime library (clib/dlib), because the precompiled versions that come with the installation binary are compiled for full register usage.

Reserving R10-R15 wont result in lots of speed reduction. Much code compiles well without actually needing r10. Thats probably why you concluded that r10 is not used. However, if you compile complex code that can take advantage of many registers, r10 will be used. Try for example a cryptographic algorithm or other large function with lots of autovars and only few function calls. Set optimization to 9 and see yourself.

Marc