

Getting Started with an Atmel Processor

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REU 2004

If you have decided to implement an Atmel processor in your robot, the following should help you get it up and running to the point where you can begin to run programs. These steps are not all inclusive and there are many different programs / hardware that will work. I will try to follow this up in a week with common problems experienced by people (including myself) over the years. This and other files will be located at <http://plaza.ufl.edu/jimgreco/>.

1) Check out the device notes on AVRFreaks. It is a tremendous resource to help you find the right microprocessor and accessories.

<http://www.avrfreaks.com/Devices/devices.php?action=1&devid=54>

If this is your first robot, I suggest buying the letATworkII board from <http://www.akida.com/>. The board runs an AtMega128. It is simple, cheap, small, fast, and has enough memory for almost anything.

2) Remember to buy or build an AVR ISP dongle to program your board. One can be purchased from Akida for \$19. If you have access to Protel and a T-Tech machine, one can be made for \$1. The schematics are on PonyProg's site.

3) To write programs in C, You will need to download WinAVR. WinAVR has GCC with it and will compile in DOS. With this you can completely bypass the need for AVRStudio.

All C files can be written in any Notepad program. WinAVR comes with Programmer's Notepad, which many people (including myself) use exclusively.

4) All C files should be placed in the same directory with an accompanying Makefile. An example Makefile is located at:

<http://plaza.ufl.edu/jimgreco/tutorials/makefile>

The TARGET section is the main source file you are compiling. Add all other C files included in the SRC section. To compile, type Make at a DOS prompt in the C directory.

5) Download PonyProg from <http://www.ponyprog.com/>. PonyProg will allow you to download programs to your Atmel.

You may need to fix a few problems with your board the first time you use it. In PonyProg click on Command | Configuration and Security Bits (CTRL+S).

a) Uncheck JTAGEN and M103C.

b) Make sure your clock is set to the correct speed, see page 34+ for the correct bit settings.