The UKM910 Development Tools: Cross-Assembler/Cross-Debugger

This document describes the installation of the assembler and debugger for the UKM910. The assembler/disassembler and linker tools are a port of the GNU Binutils package, the debugger is a port of the GNU Debugger. The package furthermore contains the editor „GNU Emacs", which serves as user interface for the GNU Debugger port.

Installation

To install the UKM910 Development tools:
- Download and unpack the file „UKM910DevelopmentTools2.zip.
- The subdirectory UKM910Dev holds the directory structure for later software development.
- Move the file _emacs to
  - C:\Dokumente und Einstellungen\%USERNAME%\Anwendungsdaten
    (Windows XP, German)
  - C:\Documents and Settings\%USERNAME%\Application Data
    (Windows XP, English)
  - C:\Users\%USERNAME%\Appdata\Roaming
    (Windows 7)
    wherein %USERNAME% is your Windows user name
- Add the full path to the directory UKM910Tools to the PATH environment variable. (Navigate to the folder using the Explorer. If you click on the location bar at the top of the window, the path will be shown and can be copied by pressing Ctrl+C).
  Example: If you extracted the files to C:\UKM910 the path would be C:\UKM910\UKM910Tools
- Go to
  - Start → Systemsteuerung → System → Tab "Erweitert" → Umgebungsvariablen
    (Windows XP, German)
  - Start → Control Panel → System → Tab „Advanced" → Environment Variables
    (Windows XP, English)
  - Start → Control Panel → System and Security → System → Advanced → Environment Variables
    (Windows 7, English)

- If the Variable PATH exists under "User variables" (Benutzervariablen), select it, choose „Edit" (Bearbeiten) and append the UKM910Tools path, separated by a semicolon (";") (Example: ";C:\UKM910\UKMTools")
  If the Variable PATH does not exist, choose „New" (Neu) enter PATH in the name field and the UKM910Tools path in the value field.
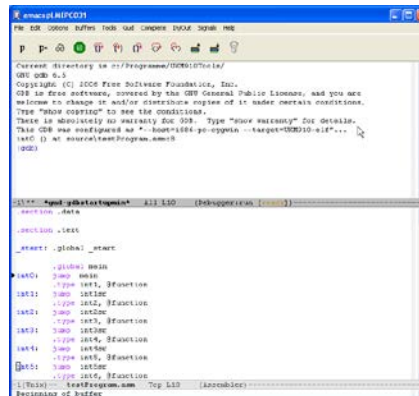
To test the installation:

- Open a Command Prompt (Eingabeaufforderung).
- Use "cd" to get to the „UKM910Dev" directory.
- Enter

```
build2elf testProgram2
UKMgdb testProgram2
```

A debugging session within emacs should open.

The script UKMgdb automatically starts a simulator executing the UKM910 code in the background. It may be necessary to close this window manually after the debugging session.