

dBUG Firmware Development

The information contained here will enable you to port the dBUG firmware to your own platform or modify BSPs (Board Support Packages) for existing ColdFire® evaluation systems.

Page Contents
<ul style="list-style-type: none">• Getting Started• Toolchain Support• Setting up the Development Environment - Win32• Setting up the Development Environment - Unix• Obtaining the dBUG Source• Flash Tool• Contact Info

[[top](#)]

Getting Started

Before embarking on your own development, you should familiarize yourself with dBUG. The [dBUG Reference Manual](#) can be found [here](#). Pay particular attention to "Section 4: Writing dBUG Board Support Packages".

[[top](#)]

Toolchain Support

The dBUG Firmware development system currently supports the Metrowerks CodeWarrior and Diab Data compiler suites. However, the source is written so that it is very compiler independent and capable of being easily ported to other build systems.

Diab Data

The Diab toolchain requires a command line environment (make, etc.). The top level Makefiles are in the dss/proj/[board] directories. Each project-specific makefile invokes the appropriate libdebug makefile. This builds the common dBUG components and links the necessary routines in with the board-specific project.

The default Diab compiler for the dBUG build system is version 4.2bE (ELF). The default installation directories for the compilers are specified in the files:

```
dss/proj/libdebug/src/dbug/[vendor]/compilers.[WIN32 | SUNS]
```

You will need to verify that the variables defined in these files point to your compiler installation directory.

If you are using a compiler other than the defaults, you will need to modify your build system. The compilers are specified by two variables, VEND1 and VEND2, in the lower-level makefiles within each project (therefore each project can default to a different compiler). The project makefiles are:

```
dss/proj/[board]/src/dbug/[comp]/make.[board]
```

Metrowerks CodeWarrior

Projects for libdbug and all Motorola ColdFire evaluation boards are also present for Metrowerks CodeWarrior for E68K/ColdFire. The board project files (.mcp) are in the dss/proj/[board]/src/dbug/mwerks directory. The libdbug project is dss/proj/libdbug/libdbug.mcp. The libdbug project must be built before the board projects can be properly linked.

[[top](#)]

Setting Up the Development Environment -- Win32

The dBUG build system (except for GUI based compilers) requires a Unix-like environment. If you are developing on a Win32 machine, you will need to install a software package such as Cygwin.

The Cygwin tools are ports of the popular GNU development tools and utilities for all modern versions of Windows. They function by using the Cygwin library (cygwin1.dll), which provides a UNIX-like API on top of the Win32 API.

You can obtain the Cygwin tools from <http://sources.redhat.com/cygwin/>.

To install the tools in the default location:

- Create the directories C:\tmp, C:\bin and C:\FIRMWARE
- Install Cygwin
- Modify C:\cygwin\cygwin.bat to add the following line prior to the invocation of the bash shell:
 - set HOME=/cygdrive/c/FIRMWARE
- The use of the Bash shell is encouraged, as it provides a more robust shell for command line usage. The Bash startup file is \${HOME}\.bashrc. Therefore, create the file \FIRMWARE\.bashrc
- Edit \FIRMWARE\.bashrc to contain the following environment variable:
 - LIBDEBUGHOST=WIN32; export LIBDEBUGHOST
- This is a good place to add any other environment variables and aliases such as (examples only, not required):
 - alias a="cd //a" b="cd //b" c="cd //c"
 - alias md=mkdir rd=rmdir
 - alias cpu="cd \$HOME/dss/src/dbug/v2/cpu"
 - alias uif="cd \$HOME/dss/src/dbug/v2/uif"
 - alias dev="cd \$HOME/dss/src/dbug/v2/dev"

You are now ready to download the dBUG source code to C:\Firmware

[[top](#)]

Setting Up the Development Environment -- UNIX

The dBUG firmware can be built in a Unix environment. To setup your environment correctly, add the LIBDEBUGHOST environment variable to the appropriate shell startup file and set it's value to SUNS.

[[top](#)]

Current Distributions

Module	Version	Date Modified	Changes	File Size	Description
Readme		09/13/01		1K	Instructions for uncompressing and installing archives.
dss	cf_rel_0	08/31/01	None	360K	dBUG components and hardware drivers

M5206AN	rel_0	08/31/01	None	27K	Project files for M5206AN evaluation board
M5206eC3	rel_0	08/31/01	None	28K	Project files for M5206eC3 evaluation board
M5206eLITE	rel_0	08/31/01	None	24K	Project files for M5206eLITE evaluation board
M5307AN	rel_0	08/31/01	None	29K	Project files for M5307AN evaluation board
M5307C3	rel_1	09/13/01	CHANGELOG	34K	Project files for M5307C3 evaluation board
M5272C3	rel_0	08/31/01	None	28K	Project files for M5272C3 evaluation board
M5407C3	rel_1	09/13/01	CHANGELOG	32K	Project files for M5407C3 evaluation board

[[top](#)]

Flash Tool

A Win32 tool for programming the Flash of all the ColdFire evaluation boards can be found [here](#).

[[top](#)]

Contact Info

Please send all bug reports, bug fixes, comments, and suggestions [here](#).

[[top](#)]