.dhex Specification

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Ch 1. Introduction

`.dhex` file is used to store binary version of a program along with debug symbols for ISA simulators, it is targetted at storing compiled binary for microcontrollers. The `.dhex` file format stores binary and debug symbols in plain ASCII text format, making compiled binary images easy to read and edit.

Ch 2. Format

Any line that does not start with a '.' character is considered as a byte in hexadecimal, part of the image or binary. Line that start with a '.' character contain debug symbols, meant for the debugger or ISA simulator. The `.dhex` file format does not support any form of address relocation, all bytes are stored in order starting from address zero. Multiple bytes or multiple debug symbols should not appear on the same line.

2.1. `.line` debug symbol

This debug symbol tells the debugger or ISA simulator that any bytes following this symbol is result of compiling/assembling a particular line in a particular file.

Syntax:

```
.line LINENO FILENAME
```

2.2. `.label` debug symbol

This debug symbol is used to mark addresses with a special label.

Syntax:

```
.label LINENO FILENAME LABEL
```

2.3. Example .dhex file

```
.line 1 "test.asm"
06
00
.label 2 "test.asm" loop
.line 3 "test.asm"
1D
01
.line 4 "test.asm"
CD
0A
.line 1 "foo.asm"
0C
01
.line 2 "foo.asm"
AB
FF
CA
```

In this example, the first byte at address 0x0000 is 0x06, the second byte at address 0x0002 is 0x00, next byte at address 0x0003 is 0x1D and so on. The label 'loop' is assigned the address 0x02, see the `.label` debug symbol at line 4. The `.line` debug symbol in the first line tells us that first two bytes, 0x06 and 0x00 is result of compiling/assembling line 1 in the file "test.asm". The last three bytes 0xAB, 0xFF and 0xCA is result of compiling/assembling line 2 in "foo.asm".