



# CROSSWARE<sup>®</sup>

## Tools for Embedded Development

# Z80 Cross Assembler

*Assembler*

*Linker*

*Library Manager*

*Environment*

The Crossware Z80 Cross Assembler for Windows is a sophisticated relocatable macro cross assembler that generates code for the Z80, Z80180 and HD64180 families of microprocessors. It includes:

- Relocatable macro cross assembler
- Relocating linker
- Library manager
- Make utility for optional command line build
- Support for code and data bank switching
- A multi-threaded, multi-target integrated development environment in which to write, edit and debug code, browse high level source code, access electronic copies of the manuals and much more
- Manuals in printed and electronic form



### Relocatable Assembler

- High speed assembly to create relocatable object module
- Z80 and HD64180/Z80180 mnemonics
- Nestable macros with full argument passing
- Nestable conditional assembly
- Comprehensive range of assembler directives and pseudo ops
- Complex expression evaluation
- Source level debug output
- User definable listing format

### Library Manager

- Combines object modules into object module libraries
- Allows object modules to be inserted into, extracted from and removed from object module libraries
- Allows object module libraries to be merged

### Relocating Linker

- Links relocatable object modules generated by assembler and library manager
- Arranges and positions relocatable segments at appropriate memory locations. Supports multiple regions, supports precise segment location and ordering
- Finalises the evaluation of incomplete complex expressions
- Produces the final program output in Intel hex, Motorola 'S' records, IEEE695 format or a binary ROM image
- Link map shows the final location and sizes of all segments and the values of all global variables

### Debug Output

The assembler can optionally generate full source level debug information. The linker updates these debug records to take account of the final location of the target program and outputs them to the target program file in IEEE695 format. Debuggers and in-circuit emulators that support this format can then use it to facilitate full source level debugging.

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## Embedded Development Studio IDE

The Embedded Development Studio is the integrated development environment application at the heart of the Z80 cross assembler.

It drives the assembler and linker tool chain.

The Embedded Development Studio also provides other facilities including:

- Creates new projects with an initial set of default files
- Allows the organisation of multiple projects into workspaces
- Context coloured editing of compiler and assembler source code
- Context coloured views of compiler/assembler listings
- Scans the project source code to generate dependency information
- Uses the browse records generated by the compiler to accelerate source code navigation
- Text file searching
- Find and Find and Replace in source views
- Provides access to the electronic manuals including full search capability
- Integrated terminal emulator facilities
- Customisable commands allowing the launch of other executables
- Conversion of bitmaps to C structures
- Supports multiple Crossware suites and tool chains and third party tool chains

## Command Line Make Utility

Although the Embedded Development Studio uses its own integrated routines to keep projects up-to-date, a stand-alone Make utility is provided which can be used to build projects from the command-line or from within another application.

The Embedded Development Studio will automatically create a makefile which is fully compatible with this stand-alone Make utility.

When the Make utility is run, it detects if any source or dependency files have changed since the last build and runs the appropriate tools (assembler, linker or library manager) to rebuild out-of-date files. It supports many advanced features including macros, inference rules, conditional inclusion and other preprocessing directives and in-line files with automatic temporary file creation.

## Printed and Electronic Manuals

User manuals are provided printed and bound so that you can study the features and facilities available at your leisure and away from your computer, and electronically so that you can rapidly locate topics from within the Embedded Development Studio. (Multi-user packages include a single set of printed manuals.)

## System Requirements

Runs on Windows 9x, Windows NT4.0, 2000, Windows XP, Windows Vista and Windows 7.