

# CROSSWARE<sup>®</sup> A6809NT

The Crossware A6809NT is a sophisticated relocatable macro cross assembler that generates code for the 6809 microprocessor. It comes complete with the Crossware Embedded Development Studio and runs under Windows 95 and Windows NT 4.0.

## HIGHLIGHTS

- ☐ Motorola compatible relocatable macro cross assembler
- ☐ Source level debug output in IEEE695 format
- ☐ Wide range of output file formats
- ☐ Highly user friendly Embedded Development Studio integrated development environment (see separate data sheet)

## OVERVIEW

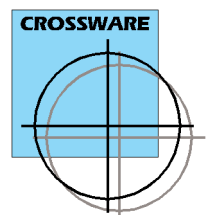
The package includes the following tools and utilities:

- ☐ relocatable macro cross assembler
- ☐ relocating linker
- ☐ make utility
- ☐ library manager
- ☐ Embedded Development Studio which includes
  - integrated project creation and maintenance utility
  - integrated editor
  - integrated terminal emulator
  - on-line books with full text search

(The Embedded Development Studio is described in detail in a separate data sheets)

All of these tools and utilities are Win32 applications built to make the most of your 32 bit computing environment. All tools can be used outside of the Embedded Development Studio if required using conventional command-line instructions.

## **6809 Assembler for Windows 9x and Windows NT4.0**



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**REF: A6809NT/9910**

## TECHNICAL DETAILS

### RELOCATABLE MACRO CROSS ASSEMBLER

The cross assembler converts assembler code into an intermediate object module format which is subsequently linked with other intermediate object modules to create the final program. Features include:

- High speed assembly to create relocatable object module
- Motorola standard segment directives
- Motorola standard mnemonics
- Nestable macros with full argument passing
- Nestable conditional assembly
- Comprehensive range of assembler directives and pseudo ops (see below)
- Complex expression evaluation with Motorola standard operators
- Upper and lower case labels with up to 255 significant characters
- Upper and lower case opcode mnemonics
- Upper and lower case macro names with up to 255 significant characters
- Comprehensive error checking with descriptive error messages
- Debug output of symbolic information
- User definable listing format

### RELOCATING LINKER

The linker combines object modules created with the compiler and/or the assembler to create the final code that will run on your target system. It carries out the following functions:

- scans each module to collect segment and variable information
- arranges and positions segments at appropriate memory locations to suit the memory organisation of the target system and any specific location information supplied by the user
- finalises the values of all variables and calculates the results of any incomplete expressions
- extracts and relocates the code from each module to produce the final target program

The target program can be produced in a number of different formats including Motorola S records, HP/Microtec IEEE695 format or as a binary rom image.

An optional link map will show 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 popular format can then use it to facilitate full source level debugging.

### LIBRARY MANAGER

Instead of being used to create a final target program, the object modules produced by the compiler and assembler can be integrated into a library. The library manager performs the tasks of:

- combining object modules into a library
- adding modules to an existing library
- removing or extracting modules from an existing library
- listing the contents of a library

### MAKE UTILITY

The MAKE utility simplifies the task of keeping object files, libraries and target programs up-to-date. It detects if any source or dependency files have changed since the last build and runs the appropriate tools (compiler, 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.

Although the Embedded Development Studio uses its own integrated routines to keep projects up-to-date, this stand-alone MAKE utility 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.

### HOST SYSTEM REQUIREMENTS

IBM compatible PC with an Intel 80486 or above running Windows 9x or Windows NT 4.0.

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The following assembler directives and pseudo-ops are available:

bsz	fields	md	noseq	setdp
clist	ifc	mex	nouna	spc
common	ifcc	nam	obj	sym
end	ifc	nocase	opt	tll
endc	ifinc	noclist	org	una
endm	ifnc	nolist	page	xdef
equ	include	nomc	pagewidth	xref
fail	list	nomd	rmb	
fcb	listf	nomex	section	
fcc	macr	noobj	seqon	
fdb	mc	nopage	set	