



MOTOROLA
Semiconductors

BOX 20912, PHOENIX, ARIZONA 85036

M68ASMRO20

Advance Information

M6800 RESIDENT MACRO ASSEMBLER AND LINKAGE EDITOR

The Resident Macro Assembler and Linkage Editor provide powerful new software development capabilities for the EXORciser. The Macro Assembler provides a superset of the standard resident assembler features, including relocation, linking, macros, and conditional assembly. The Linkage Editor combines relocatable object modules to produce an absolute object image. Object images may be created either in memory or on an external storage medium. Operation of the Macro Assembler and Linkage Editor are shown in the diagram.

RELOCATION

Relocation allows the assignment of absolute memory addresses to a program at linkage edit time rather than at assembly time. Programs assembled by the Macro Assembler can be loaded anywhere in memory by the Linkage Editor.

LINKING

Linking allows intermodule references to be resolved at linkage edit time rather than requiring absolute address assignment at assembly time. As relocatable programs are loaded by the Linkage Editor, labels are assigned absolute addresses, and references to such labels in other program modules can be satisfied.

MACROS

Macros are used to assign a name to a "template" sequence of assembly-language instructions. Subsequent use of the macro name causes that instruction sequence to be inserted into the assembler input stream. Arguments supplied with a macro call are inserted into specified locations in the template.

CONDITIONAL ASSEMBLY

Conditional assembly may be used to select or omit optional source statements for assembly.

MACRO ASSEMBLER FEATURES

Upward compatible with standard Resident Assembler with the following enhancements:

Output

- Absolute object — EXORciser loadable format
- Relocatable object — Linkage Editor loadable (object module)
- Memory load

Program Sections

- Absolute — non-relocatable
- Base — directly addressable (0-255)
- Blank Common — uninitialized common
- Data — data section (external addressing)
- Program — instruction section
- Named Common — common sections included within one of the above

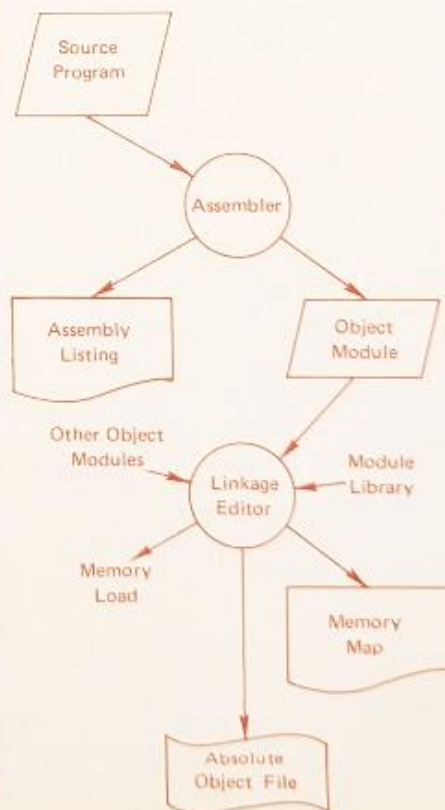
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M6800 SOFTWARE

SOFTWARE OPTIONS

Option	Media	Part Number
A	Cassette	M68ASMRO20A
B	Paper Tape	M68ASMRO20B
D	Floppy Disk	M68ASMRO20D

OPERATION OF MACRO ASSEMBLER LINKAGE EDITOR



Linking

- External definitions
- External references

Macros

- Up to 36 arguments
- Strict character substitution for arguments
- Assembler generated symbols
- Up to 8 levels of nesting
- Repeat Macro capability

Conditional Assembly

- String/expression tests
- Up to 8 levels of nesting

Other

- Symbol cross reference table
- Listing line width control
- Title on each page of listing
- SET — symbol redefinition
- BSZ — block storage — initially zero
- Expression evaluation — parenthesized expressions

LINKAGE EDITOR FEATURES

- Relocation of object modules
- Linking of object modules
- Two output modes
 - Direct memory load
 - Binary memory image (EXORciser load format)
- Memory load map
- Map of external symbols
- Undefined symbol list
- Flexible I/O device assignment
 - Disk
 - Console
 - Tape
 - Line printer
- Overlays

