



SW8600

Assembler Package

RESUME

The programming of frequently used or performance critical procedures is facilitated by the Assembler Package, which is employed for writing utility programs, code procedures, and other basic software for the RC 8000. The assembly language, SLANG, was developed as the systems programming language for the RC 4000 and RC 8000 computers, and nearly all basic software, including SLANG itself, is written in this language. Some of the features of this package are:

- Program block structure like that of ALGOL60.
- Increased processing speed and reduced program size.
- Standard input/output procedures to simplify I/O programming.
- Use of assembly language code procedures in high-level language programs.

DESCRIPTION

The Assembler Package comprises SLANG, the assembler for the SLANG language, Slang-xref, which lists identifiers and references to identifiers in SLANG programs, and Insert-proc, which inserts catalog entries as specified by code procedures during assembly.

Besides containing directives that control the assembler, the SLANG program source text describes the contents of storage locations as instructions, text strings, or numbers. Instructions and data words can refer to other storage locations by means of symbolic addresses called identifiers. An identifier can also refer to the value of an expression defined during assembly.

SLANG has a program block structure like that of ALGOL60. Thus identifiers must be declared in a block head before they are used, and they may only be used in the same block or in blocks enclosed by the latter. The outermost block delimits the program as a whole.

The SLANG assembler performs an extensive syntax and type check on the program source text. All errors can be found in one assembly. The translation speed is approximately 75 statements per second. The object program is transferred to backing storage as a sequence of relocatable segments.

Large programs may be assembled in separate sections, and to facilitate the handling of programs in several versions, SLANG includes conditional assembly.



The execution time of a SLANG program depends on the size of the available storage area. Test output can be generated during program execution.

Code procedures written entirely in assembly language may be included in the ALGOL or RC FORTRAN library as external procedures (see datasheet RCSL 42-i 1293 and 1294).

SOFTWARE PREREQUISITES

SW8001 Basic System Package (datasheet RCSL 42-i 1275).

SW8010 System Utility Package (datasheet RCSL 42-i 1276).