SOFTWARE

# Basic Compiler/interpreter

## ■ D-BASIC V

**D-BASIC V is a compiler/interpreter program using an interactive language. In contrast to other BASICs which interpret the source program at each execution, D-BASIC V checks and compiles your source program as you enter it, line by line. A syntax error will therefore result in an immediate error message on the screen. While D-BASIC V contains elementary statements to write simple programs, it is designed to grow with the user to encompass more complex and efficient programs via easily added advanced techniques. D-BASIC V allows the use of multi-character variable names which aid in creating programs that are self-documenting and maintainable.**

## D-BASIC V features

- o Conforms to ANSI X3.60-78 standard with many extensions
- o Long variable names
- o Multi-line recursive functions and procedures with local variables
- o REPEAT...UNTIL and WHILE...WEND statements
- o Multiline IF...IFEND with ELIF
- o Open Pipe statements for efficient fork handling
- o Request statements for access to all UNIX system calls
- o IEEE standard floating point arithmetic with trigonometric functions
- o 32 or 16 bit integers with automatic conversion to/from float for maximum execution speed
- o Extended precision fixed and floating point decimal string arithmetic
- o Advanced file handling with path/name translation tables
- o Automatic indentation for loops and procedures
- o Program chaining with common statements
- o Formatted print commands
- o Date and time function
- o Suspend task instruction
- o Portable – totally written in the C language

## Programming development

All programming is interactive with immediate syntax and error monitoring. Multi-line functions and procedures permit both parameters and results to be transferred for easy program structure. Automatically indented loops provide for easy readability. Every type of error can be handled without stopping the program, promoting very stable application execution. Trace and single step functions simplify debugging.

With the aid of optional instructions, advanced multi-user database systems can also be utilized as well as external programs written in arbitrarily chosen languages via an Open-Pipe statement. User-written Assembler routines can also be called up from the D-BASIC V program.

## ISAM (option)

ISAM is a database handling tool which is optional to D-BASIC V. Special instructions are used to create anything from simple telephone lists to advanced multi-user database systems. The ISAM is working in a B-tree fashion and permits the user to work with one or more databases at the same time. Index-sequential access with fixed record length allow up to 50 indices in the same database. All indices and keys are updated during writing, eliminating the need for sorting.

## MIMER (option)

MIMER is relational database which is an option to D-BASIC V.

Statements are included for access to the database. MIMER is a multi-user relational database management system with an active data dictionary to control data access, usage, and security. MIMER is now a whole family of database access products. If MIMER/DB is operating on the system, then this option may be included in D-BASIC V.

## Communication with other programs

D-BASIC V programs can co-operate with assembly routines located in internal memory areas. With the 'PIPE' statement communicaton is handled between processes in the system, and with the 'REQUEST' statement direct use can be made of the UNIX system calls.

## Data types and variables

D-BASIC V has 32 bit integers, 32 or 64 bit floats and may contain strings up to 64 kbytes. Names might have a length of 160 characters. All datatypes can be used in vectors and matrices with any number of dimensions.

## Operations

- o Arithmetics: Exponential functions (**), Multiplication (*), Division (/), Addition (+), Subtraction (–).
- o Logic: and, eqv, imp, not, or, xor.
- o Relations: =, <>, >, <, >=, <=.
- o ASCII: String arithmetics with up to 126 character precision.

## Commands

RUN, CLEAR, CON, NEW, AUTO, RENUMBER, ERASE, ED, LOAD, MERGE, LIST, SCR, SAVE, UNSAVE, STAT

DIAB DATA

Diab Data AB. Box 2029, S-183 02 Täby, Sweden. Tel +46 8 768 06 60. Fax +46 8 792 05 61.
Diab Data Inc., 323 Vintage Park Drive, Foster City, CA 94404, USA. Tel +1 415 571 -1700. Fax +1 415 571-9068.
Diab Data AS. Maridalsveien 9, N-0178 Oslo 1, Norway. Tel +47 2 36 37 75. Fax +47 2 36 11 79.

## Data instructions

LET, READ, RESTORE, DIM, COMMON, DATA, SINGLE, DOUBLE, SHORT INT, LONG INT, EXTEND, NO EXTEND, INTEGER, FLOAT, OPTION BASE, SWAP, RANDOMIZE, FIELD, CASEUP, CASEDN

## Program flow instructions

STOP, END, BYE, CHAIN, DEF FN, RETURN, FNEND, DEF PROC, PROC, PROCEND, REPEAT...UNTIL, FOR, FOR...TO...STEP, NEXT, GOSUB, GOTO, ON...GOSUB, ON...GOTO, IF...THEN...ELSE, ELIF, IFEND, WHILE, WEND, ON ERROR GOTO, RESUME, ON...RESTORE, TRACE, NO TRACE

## I/O instructions

DIGITS, OPTION EUROPE, INPUT, INPUT LINE, POSIT, PRINT, GET, PUT, PRINT USING, NAME, KILL, OPEN, PREPARE, CLOSE, LOCK, UNLOCK, FIND, INKEY$, CLS, CRT, (CURUP, CURDN, CURLT, CURRT, HOM, CR, CLE, CLL, IL, DL, BEL, REVON, REVOFF, UNDON, UNDOFF, HFON, HFOFF)

## Mathematical functions

ABS(x), FIX(x), INT(x), MOD(x,y), PI,RND, SGN(x), SQR(x), EXP(x), LOG(x), LOG10(x), ATN(x), COS(x), TAN(x), SIN(x), HEX$(x), OCT$(x)

## String handling functions

ADD$, DIV$, MUL$, SUB$, COMP%, NUM$, VAL, ASCII, INSTR, LEN, MID$, LEFT$, RIGHT$, CHR$, SPACE$, STRING$

## Miscellaneous instructions and functions

CUR, ERRCODE, FN, REM or !, SLEEP, TAB, TIME$, ARGV$, ARGC%, SYSTEM, REQUEST, SCAN, ATIME$, ESC$, SYN$

## Advanced instructions and functions

CALL, CVT, OPEN...MODE, PREPARE...MODE, OUT, INP, PEEK, PEEK2, PEEK4, POKE, SWAP%, SWAP2%, SYS, VAROOT, VARPTR

## ISAM functions (option)

ISAM OPEN, ISAM READ, ISAM WRITE, ISAM UPDATE, ISAM DELETE

## MIMER instructions and functions (option)

MIMER BEGIN, MIMER OPEN, MIMER GETFIRST, MIMER GETNEXT, MIMER WRITE, MIMER UPDATE, MIMER DELETE, MIMER TRANSACTION, MIMER COMMIT, MIMER ABORT, MIMER END

## Installation considerations

Standard DS90 system

## Ordering information

D-BASIC V 072-8715-XX
XX is machine dependent

UNIX and MIMER are trade marks of AT&T Bell Labs and Mimer Information Systems respectively.
The specifications herein are given for information purposes only and are subject to alterations without prior notice.

Diab Data/937/024/1500/Promotive