digital

Software Product Description

PRODUCT NAME: Cassette Programming System (CAPS-8)   SPD 3.1.0

DESCRIPTION:

CAPS-8, the Cassette Programming System, is an economical,
reliable programming system for use with the PDP-8/E
computer. The system incorporates the convenience of a
magnetic tape resident programming system and the
adaptability of a paper tape system. CAPS-8 provides
interactive processing that utilizes monitor-based file
handling techniques, language and utility processors, and
facilities for fault detection. The system hardware consists
of the TA8 DECcassette system that provides low-cost bulk
storage, an 8K PDP-8/E, a console terminal device such as
an LA30 DECwriter, and an optional line printer. An MI8-E
hardware bootstrap loader, although not a required part of
the system hardware, facilitates loading of the Keyboard
Monitor into core and thus would be a valuable hardware
addition to the CAPS-8 PDP-8/E.

The CAPS-8 software is engineered to take full advantage of
the TA8E features and the power of the PDP-8/E, F or N
processors. The resulting CAPS-8 system is an inexpensive,
highly cost effective computing system with a wide range of
applications in industrial research and laboratory development
and monitoring. Those applications which were typically thought
of as being paper tape system applications can now be handled
at greatly increased performance by CAPS-8.

The Cassette Monitor accepts typed commands to load and run
library programs, list tape directories, and perform various
functions associated with cassette file management. System
command structure is similar to that of OS/8, providing the
same concise format and ease of use. The tape cassette
serves as an unformatted, file-structured bulk-storage device
which contains the system executive along with a library of
system and user programs. Monitor level control is maintained
by refreshing the memory resident portion of the system
executive from the cassette whenever necessary.

July 1974

System programs supplied with the Cassette Programming System
include:

Symbolic Editor

The Symbolic Editor is used to create and modify ASCII
source files so the the source files can be used as input
to the BASIC or PAL-C system programs. The editor accepts
any number of input files and produces a single edited
output file. CAPS-8 EDIT features include:

- The current buffer can be output to the line printer.

- Over 5600 source characters may be stored in a single
  buffer.

- After a line is deleted, changed, or searched, free
  buffer space is automatically consolidated.

- An intra-buffer string search can be carried out. The
  current buffer is searched to locate a particular
  occurrence (1st, 2nd, 5th, etc...) of a string of as
  many as 20 characters.

- An inter-buffer string search can be carried out. The
  current buffer and subsequent buffers are searched to
  locate a particular occurrence of a string of up to 20
  characters.

PAL-C Assembler

PAL-C is symbolic, machine-oriented source language applicable
to any problem. A program written in this language is trans-
lated by the assembler into a binary object file; two passes
are required to carry out the translation. An optional third
pass provides an octal and symbolic listing and a symbol table.
CAPS-8 PAL C features include:

- Conditional assembly pseudo-operators to perform certain
  tasks or to interpret subsequent coding in a certain way
  For example, some pseudo-operators generate storage
  words in the object program; others can be used in the
  assembly operation.

- Expanded symbol table allowing up to 1800 entries on a
  12K system

- A load-and-go option that causes the input program to
  be assembled, listed, loaded, and executed by one key-
  board command

- Cassette I/O support

- Rapid binary symbol table search

- Paginated listings with page headings

CAPS-8 BASIC

The BASIC language was specifically developed for simple
and convenient on-line use. CAPS-8 BASIC features include:

- Program storage on cassettes (NEW, OLD, and SAVE
  commands)

- Runtime data files on cassette

- Program chaining that results in virtually unlimited
  program length

- Immediate mode commands that provide a desk-calculator
  approach for one-time-only problems where a conventional
  stored program may not be necessary

- One- and two-dimensional subscripting

- User-defined function

- User-coded, assembly language function

SYSCOP

The System Copy Program enables the programmer to transfer
files from one cassette to another. The file transfer can
involve a specific file, or all the files on a cassette.
Thus, the programmer can make copies of important cassettes,
such as the system cassette, and can consolidate cassettes
that contain empty files.

File transfers can be verified as they take place. To
ensure rapid error detection and correction, SYSCOP includes
a comprehensive error diagnostic.

CODT

Cassette Octal Debugging Technique (CODT) is a modified
version of standard PDP-8 ODT. Using CODT, the programmer
can run his binary program on the computer, control its
execution, and make alterations to his program by typing at
the terminal keyboard.

UTIL

The CAPS-8 Utility Program (UTIL) allows the user to take
files stored on paper tape and transfer them as named files
onto a cassette, using either the high- or low-speed reader.
The utility program will transfer both ASCII and binary files.

MINIMUM HARDWARE REQUIRED:

PDP-8/E, F, or M central processor with 8K of memory.
A console terminal (LA30-PA DECwriter teleprinter, VT05
alphanumeric CRT display and keyboard, LT33, LT35
Teletypes).
TA8-E Dual Drive Cassette Unit and Controller.
MI8-EC Hardware Bootstrap Loader (highly recommended).

OPTIONAL HARDWARE SUPPORTED:

Additional memory (to a system total of 32K).
      Note: BASIC does not utilize over 8K.

LS8, LE8-FA, or LE-JA series Line Printer (highly recommended
especially when VT05B is the console terminal).

PR8E High-Speed Paper Tape Reader (supported by UTIL as
described above).

PREREQUISITE SOFTWARE:

None

ORDERING INFORMATION:

QF007-AN	Single-user license*; binaries on cassette and manual	$250.00
QF007-EC	Sources on OS/8 DECtape (requires license*)	$250.00
QF007-FZ	Listing (requires license*)	$250.00

SUPPORT CATEGORY: B - One year Software Performance
                     Reporting (SPR) Service.

UPDATE POLICY: Any future updates will be available at the
prevailing handling and service charges.

* This software is furnished under a license for use in a
single system and can be copied (with the inclusion of DIGITAL's
copyright notice) only for use in such system, except as may
otherwise be provided in writing by DIGITAL.

D3.1.0