digital

Software Product Description

PRODUCT NAME: BASIC/CAPS-11, Version 1 **SPD 11.5.2**

DESCRIPTION:

BASIC is a high level conversational programming language developed at Dartmouth College that uses simple English-like statements and familiar mathematical notations to perform an operation. Due to its conversational structure, BASIC is simple enough for the inexperienced programmer, while having capability sufficient to control all of the system resources.

BASIC/CAPS-11 is an incremental BASIC language compiler that provides access to CAPS-11's cassette file structure.

BASIC/CAPS-11 extensions language include:

- An optional string capability. Core conscious users can delete the string support in BASIC/CAPS-11 and reclaim the space for their programs; users who desire have Dartmouth-compatible string support complete with string arrays and functions. At least 16K words of memory required for string capability.
- A "CALL" statement which allows easy interface of assembly language functions; the subroutine can be called by name and passed several arguments.
- Sequential File support for the TA11 cassette unit.
- Chaining and overlay support to accommodate large programs.
- Extensive support for the PDP-11 Laboratory Peripheral Systems (LPS11), including the A/D's, Real-Time Clock, Digital I/O and Display. At least 16K words of memory are required for LPS support.
- Extensive support for the display processor in graphics systems, making available for the user all the hardware capabilities of that device. At least 16K words of memory required for this capability.

The file structure implemented under BASIC/CAPS-11 includes provisions for one sequential file per cassette unit. The sequential files accept any type of ASCII data, and are particularly useful for stored text and data strings.

BASIC/CAPS-11 also runs in fully interactive "desk calculator" mode that can aid program development and perform one-time only calculations in response to console commands without the need for a conventional stored program.

Since BASIC is a higher level language, even the novice programmer can solve complex data acquisition and processing problems.

The Laboratory Peripheral Systems for the PDP-11 (LPS11) are fully supported by the system via modules supplied with BASIC/CAPS-11. The real-time extensions enable the user to sample and display, in real-time, a variety of data related problems from analog to digital converters, digital input/output, and external events. Sampling is controlled by crystal clocks and/or Schmitt Triggers with which the user may specify such parameters as sampling rate and response time.

All LPS11 commands are initiated by the BASIC "CALL" statement. The extension contains 20 commands, divided into 5 categories depending on their function. Each category is supplied as a separate module allowing the user to include only the modules necessary for a given experiment. The 5 modules are:

Module 0: Interface to BASIC/CAPS-11 (required)
Module 1: Analog to Digital conversion
Module 2: Real-Time Clock
Module 3: Digital I/O
Module 4: Display

For systems with a VT11A Graphics Display Processor, BASIC/CAPS-11 provides a complete set of "CALLs" to graphic routines, allowing the user to control all the hardware features of the display processor such as vectors, alphanumerics, points, multi-intensities, blinks, etc. Additional commands perform tasks such as creating and tagging subpictures (graphic subroutines), and displaying figures and arrays.

The graphic extensions provide dynamic interaction with the system via functions for light pen interaction and dynamic allocation/deallocation of display buffers.

MINIMUM HARDWARE REQUIRED:

Any valid CAPS-11 configuration. At least 16K words of memory are required for string support, LPS-11 and/or display support.

OPTIONAL HARDWARE:

- Additional memory to a system total of 28K words
- LP11, LS11 Line Printer
- PC11 High-speed Reader/Punch
- KE11-B Extended Arithmetic Element for the PDP-11/10, 11/20
- KE11-E Extended Instruction Set for the PDP-11/40
- FP11-B Floating Point Processor for the PDP-11/45
- VT11A Graphics Display Processor
- LPS11 Laboratory Peripheral Systems. Requires LPSAD-12 and LPSAD-NP. Options:
  1. LPSAM 8-channel expansion multiplexer
  2. LPSSH Second sample and hold for a dual sample and hold configuration
  3. LPSKW Programmable real-time clock and two Schmitt Triggers
  4. LPSVC Display control including two 12-bit DACS for the VR14 scope
  5. LPSDR 16-bit buffered digital I/O with drive capabilities and two programmable normally open relays
  6. a one-module laboratory subsystem

PREREQUISITE SOFTWARE:

CAPS-11, Version 1 or later

OPTIONAL SOFTWARE:

None

TRAINING CREDITS:

None

SUPPORT CATEGORY:

C — Software Support will be provided as listed in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

No updates are planned for this product.

ORDERING INFORMATION:

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

Source and/or listing options are only available after the purchase of at least one binary license and after a source license agreement is in effect.

The following key (N, R, Z) represents the distribution media for the product and must be specified at the end of the "Q" number, i.e., QJ910-CN = binaries on cassette.

N = Cassette
R = Microfiche
Z = No hardware dependency

Standard Options

QJ910 -C— Single-use license, binaries, documentation, no support services (media: N)

QJ910 -D— Single-use license only (media: Z)

Source/Listing Options

QJ910 -E— All sources (media: N)

QJ910 -F— Listings (media: R)

ADDITIONAL SERVICES:

None