

# digital

# Software Product Description

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**PRODUCT NAME: BASIC/PTS, Version 1**

**SPD 9.15.2**

## **DESCRIPTION:**

BASIC is a high level conversational programming language developed at Dartmouth College. BASIC uses simple English-like statements and familiar mathematical notations to perform an operation.

BASIC/PTS is a core-only single-user BASIC language compiler designed for use in interactive environments. BASIC/PTS is implemented as an incremental compiler.

BASIC/PTS features include:

- An optional string capability. Core conscious users can delete the string support in BASIC/PTS and reclaim the space for their programs; users who desire have Dartmouth-compatible string support complete with string arrays and functions.
- A "CALL" statement which allows interface of assembly language functions; the user function can be called by name and pass several arguments.
- Interrupt driven support for line printer and high-speed paper tape, as well as support for several PDP-11 floating point options.
- Extensive support for the Laboratory Peripheral System for the PDP-11 (LPS11) including the A/D's, clock, display control and Digital I/O.
- Extensive support for the VT11 display processor in graphics systems.

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

The Laboratory Peripheral System for the PDP-11 (LPS11) is fully supported by the system via modules supplied with BASIC/PTS. The real-time extensions enable the user to sample and display, in real-time, a variety of data. Sampling is controlled by crystal clocks and/or Schmitt Triggers for 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 according to 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/PTS – always required  
Module 1: Analog to Digital Conversion  
Module 2: Real-Time Clock  
Module 3: Digital I/O  
Module 4: Display

For systems with a VT11 display processor, BASIC/PTS provides a complete set of "CALLs" to graphic routines, allowing the user to use 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, dynamic allocation/deallocation of display buffers, and saving and restoring display images as files on systems device.

## **MINIMUM HARDWARE REQUIRED:**

Any PDP-11 Processor (except LSI-11 based products) with:

- at least 16K bytes of memory
- 32K bytes of memory for LPS11 and/or graphics option
- console terminal
- paper tape I/O device (LT33, LT35 low-speed reader/punch or PC11 high-speed reader/punch)

## **OPTIONAL HARDWARE:**

- Additional memory to a system total of 56K bytes
- LP11 Line Printer
- KE11-E Extended Instruction Set for the PDP-11/40
- 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

**PREREQUISITE SOFTWARE:**

None

**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 (B, R, Z) represents the distribution media for the product and must be specified at the end of the "Q" number, i.e., QJ900-CB = binaries on Paper Tape.

B = Paper Tape

R = Microfiche

Z = No hardware dependency

*Standard Options*

QJ900 -C— Single-use license, binaries, documentation, no support services (media: B)

QJ900 -D— Single-use license only (media: Z)

*Source/Listing Options*

QJ900 -E— All sources (media: B)

QJ900 -F— Listings (media: R)

**ADDITIONAL SERVICES:**

None