

# Software Product Description

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**PRODUCT NAME: PEAK-11, Version 2**

**SPD 15.3.1**

## DESCRIPTION:

PEAK-11 is a hardware/software system based on the PDP-11/34 that can accept and analyze peak output from a variety of analog laboratory instruments, including gas chromatographs, liquid chromatographs, and auto analyzers. The PEAK-11 system configurations (PK11) include the RT-11 Version 3 operating system, MU BASIC Version 1 language processor, and the PEAK-11 Version 2 specific software.

PEAK-11 provides:

- User interaction with the data acquisition processes and data files
- Multiple terminal support for background data manipulation and report generation
- High level language (MU BASIC)
- Mass storage of data
- Straightforward connection of instrumentation output to standard computer input/output hardware

PEAK-11 specific software runs as a foreground task under the RT-11 F/B monitor and uses the RT-11 file structure for data files. The foreground task consists of three functional modules that allow:

- Data acquisition of analog signals
- Peak processing of the acquired data
- Data storage in disk files

MU BASIC runs in the background partition. MU BASIC is extended with PEAK-11 specific routines that permit the user to communicate with and extract data from the foreground, or foreground data file. The PEAK-11 foreground and background software routines can run independently of each other. They do not have to be running together. Thus, while collecting data in the foreground the user can:

- Analyze data in the background, or
- Run MU BASIC programs not related to PEAK-11 in the background, or
- Run a debugged program in the background that was written by the user in another language supported by RT-11 (e.g., MACRO, or separately licensed FORTRAN IV or FOCAL).

Through the extensions to MU BASIC, the interactive user selects parameters for the acquisition and processing of data, and generates user-developed reports. These extensions allow the user to tailor the system and analyze the data to suit a specific application.

Foreground data collection and analysis is initiated by external contact closure (user supplied). Foreground data analysis automatically provides:

- Digital filtering
- Peak detection
- Integration
- Baseline determination
- Storage of peak information in the disk data file for background report generation

On an RK05 cartridge disk based system under extended MU BASIC, the user can optionally direct the raw data from the analog instrument directly to a data file for later peak processing in the foreground and/or user developed analysis of raw data.

At the completion of the foreground peak analysis, a uniquely numbered, timed and dated file is available to the operator for report generation. The file contains the:

- Peak area
- Peak height
- Peak position
- Peak width
- Peak leading/trailing minima and times
- A code word indicating the type of baseline detection

A recycle mode is included to allow the operator to repeat analyses with identical control parameters.

The RX11 disk based PEAK-11 systems support eight (8) instruments simultaneously and up to two (2) MU BASIC terminals. The RK05 disk based PEAK-11 systems accommodate sixteen (16) instruments simultaneously and up to four (4) MU BASIC terminals. PEAK-11 supports DIGITAL-supplied analog and digital I/O devices only. Interfacing to user instruments is the user's responsibility.

## MINIMUM HARDWARE REQUIRED:

Any valid PK11 system configuration.

## OPTIONAL HARDWARE:

*Under the PEAK-11 specific background software:*

- Up to two MU BASIC terminals on PK11-A and PK11-B systems
- Up to four MU BASIC terminals on PK11-C and PK11-D systems

Support may be limited to fewer terminals if the sys-

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tem includes devices other than those required in the minimum configuration.

*Under the PEAK-11 specific foreground software:*

None

*With no PEAK-11 specific software:*

Supports any mass storage, unit record, or terminal device supported by RT-11 Version 3 and MU BASIC Version 1.

**PREREQUISITE SOFTWARE:**

None

**OPTIONAL SOFTWARE:**

*Under RT-11 alone:*

- FORTRAN IV/RT-11
- FOCAL/RT-11
- FORTRAN/RT-11 Extensions (for Graphics only)
- BASIC/RT-11 Extensions (for Graphics only)

**TRAINING CREDITS:**

None

**SUPPORT CATEGORY:**

A — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

**UPDATE POLICY:**

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer for a media charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

**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.

The following key (A, B) represents the form of power source for the product and must be specified at the end of the order number, e.g, PK11-AA = PEAK-11 system using power available in the United States.

A = United States (60 Hz)

B = Europe (50 Hz)

*Standard Options*

- PK11 -A— PEAK-11 system (RX11 disk-based with MOS memory), single-use license for RT-11, MU BASIC/RT-11, and PEAK-11 specific software, binaries, documentation, support services (power: A, B)
- PK11 -B— PEAK-11 system (RX11 disk-based with core memory), single-use license for RT-11, MU BASIC/RT-11, and PEAK-11 specific software, binaries, documentation, support services (power: A, B)
- PK11 -C— PEAK-11 system (RK05 disk-based with MOS memory), single-use license for RT-11, MU BASIC/RT-11, and PEAK-11

specific software, binaries, documentation, support services (power: A, B)

- PK11 -D— PEAK-11 system (RK05 disk-based with core memory), single-use license for RT-11, MU BASIC/RT-11, and PEAK-11 specific software, binaries, documentation, support services (power: A, B)

*Update Options:*

**NOTE:**

Updates for RT-11 and MU BASIC/RT-11 are not included in the following PEAK-11 update options, and must be ordered separately.

Users of PEAK-11 Version 1 whose specified Support Category warranty has expired may order under license the following software update at the then current charge for such update. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

- QJ014 -H— PEAK-11 specific binaries, documentation (media: E, Y)

Users of PEAK-11 Version 1 whose specified Support Category warranty has not expired may order under license the following software update for the then current media charge. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

- QJ014 -W— PEAK-11 specific binaries, documentation (media: E, Y)

**ADDITIONAL SERVICES:**

None

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**ADDENDUM  
SOFTWARE SUPPORT CATEGORIES**

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

**CATEGORY A**

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

**CATEGORY B**

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

**CATEGORY C**

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.