

# Software Product Description

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**PRODUCT NAME: FORTRAN/RT-11 Extensions, Version 1B**

**SPD 12.12.4**

## **DESCRIPTION:**

The FORTRAN/RT-11 Extensions consist of:

- FORTRAN IV/RT-11
- A library of graphics subroutines supporting the VT11 and VS60 display processors
- A library of laboratory subroutines supporting the LPS11 Laboratory Peripheral System, the AR11 Analog Real Time Subsystem, and the AD11-K, KW11-K, and DR11-K laboratory I/O modules
- A FORTRAN debugger

The FORTRAN/RT-11 graphics library is a comprehensive set of FORTRAN-callable subroutines which enable the user to create and interact with graphic output on the VT11 and VS60 display processors. The subroutines enable the programmer to use many of the features of the VS60. If the library is configured for the VT11, the subroutines emulate the VS60 features whenever possible. Programs can thus be written for either device. The user need only link the program with the appropriate library. For additional flexibility, most subroutines are written in FORTRAN to facilitate maintenance and modification.

The FORTRAN/RT-11 VT55 subroutine provides access to all of the graphics features of the VT55 graphics terminal. In addition, single subroutine calls can be used to plot lines or complete data curves.

The laboratory subroutine library provides the capability of acquiring data in all of the modes provided by the LPS11 and AR11 hardware and to operate a CRT display through the digital-to-analog converters provided in these units. A completion routine capability allows the user to write subroutines which are activated asynchronously upon completion of many actions, such as the filling of a data buffer. DR11-K support allows up to eight of these interfaces to be operated simultaneously. The AD11-K (with optional AM11-K), AA11-K, and KW11-K are supported in a fashion compatible with the LPS11 support. The library is easily configured for the particular set of hardware on the user's machine.

## **MINIMUM HARDWARE REQUIRED:**

Any valid RT-11 configuration with at least 16K words of memory. 24K words of memory are recommended for large graphics display files such as may be encountered with the VS60.

## **OPTIONAL HARDWARE:**

Any optional devices supported by the operating system and FORTRAN IV/RT-11, Version 2.0.

VT11A Graphics Display Processor  
VS60 Graphics Display Processor  
VT55 Graphics Terminal  
LPS-11 Laboratory Peripheral System  
AR11 Analog Real Time Subsystem  
DR11-K Digital I/O System (up to 8)  
AD11-K Analog-to-digital converter  
KW11-K Real-time clock  
AM11-K Multiplexer  
AA11-K Digital-to-analog converter

## **PREREQUISITE SOFTWARE:**

RT-11 Operating System, Version 3 (with the exception of the XM feature under the foreground/background monitor) or later.

## **OPTIONAL SOFTWARE:**

None

## **TRAINING CREDITS:**

None

## **SUPPORT CATEGORY:**

B — 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.

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The following key (C, D, E, Q, R, T, Y, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ980-AD = binaries on 9-track magnetic tape.

C = DECTape  
 D = 9-track Magnetic Tape  
 E = RK05 Disk Cartridge  
 Q = RL01 Disk Cartridge  
 R = Microfiche  
 T = RK06 Disk Cartridge  
 Y = RX01 Floppy Diskette  
 Z = No hardware dependency

#### Standard Options

QJ980 -A— Single-use license, binaries, documentation, support services (media: C, D, E, Q, T, Y)

QJ980 -C— Single-use license, binaries, documentation, no support services (media: C, D, E, Q, T, Y)

QJ980 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

#### Source/Listing Options

QJ980 -E— All sources (media: D, E, Q, T)

QJ980 -F— Listings (media: R)

#### Update Options

Users of FORTRAN/RT-11 Extensions, 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 source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ980 -H— Binaries, documentation (media: C, D, E, T, Y)

QJ980 -N— Sources update (media: D, E, T)

Users of FORTRAN/RT-11 Extensions, 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 source or binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QJ980 -W— Binaries, documentation (media: C, D, E, T, 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.

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