digital

Software Product Description

PRODUCT NAME: FORTRAN GRAPHICS PACKAGE, Version 1.1 SPD 15.81.3

DESCRIPTION:

The FORTRAN Graphics Package is a collection of FORTRAN-callable routines for users of FORTRAN on RT-11, RSX-11M, RSX-11D, IAS, or VAX/VMS operating systems who wish to use the graphics capabilities of the VT55 terminal (not on VAX/VMS) and the VT11 or VS60 display processors. The package includes two sets of routines: a PLOT55 routine for the VT55 graphics terminal, and DECgraphic-11 routines for the VT11 and VS60 display processors.

PLOT55

The PLOT55 routine (not available for VAX systems) is accessed by a FORTRAN CALL statement. The routine has four arguments that allow the user to construct two graphs, set their mode (histogram or point-plot), add vertical and/or horizontal grid lines and manipulate graphics cursors (short vertical bars used for coordinate identification). In multi-user systems, several VT55 terminals can be in use simultaneously.

DECgraphic-11

The DECgraphic-11 package provides support for the VT11 or VS60 display processors in either of two ways:

- As a component of a satellite GT41 or GT43 (for the VT11), or GT62 (for the VS60) system. This "intelligent terminal" is connected to an RSX-11M, RSX-11D, IAS, or VAX/VMS host system by a standard asynchronous serial line terminal interface. The number of satellite intelligent terminal subsystems is limited only by the number of terminals that the host system supports.

- As a peripheral on the PDP-11 UNIBUS. The package includes a device driver that allows operation of one VT11 or one VS60 on an RT-11 or RSX-11M system configuration.

Over 60 routines are provided in the DECgraphic-11 package. They allow the FORTRAN programmer to display, modify, and interact with graphic information at the display console. Through CALL statements, the user can display points, vectors, text, and graph data. The subpicture feature enables the programmer to display repeated images. Special graphic routines enable the programmer to display an entire array of data with one subroutine call. General "attention handling" facilities for the light pen, LK11 push button box, and LK40 keyboard are also included in the package. Subroutines are available that enable the programmer to display menus for light pen selection.

Miscellaneous routines enable the programmer to move, modify, delete, and otherwise manipulate images.

DECgraphic-11 also provides support for the special hardware features of the VS60. The user can alter the scale at which images and text strings are displayed, "window" the display viewing area over a large "drawing area," and select output on an optional second display scope of the VS60.

Most of the routines in the DECgraphic-11 package are available on either the satellite or standard peripheral configurations. In satellite configurations, however, the programmer has the additional capability to construct user-controlled programs in the satellite processor. This permits "attention handling" and other simple tasks to be carried out without affecting the host processor.

MINIMUM HARDWARE REQUIRED:

RT11 SUPPORT

- Any valid RT11 operating system configuration supporting FORTRAN IV/RT-11 that includes:

  1. A UNIBUS PDP-11 processor.
  2. At least 32K bytes of memory.
  3. An RL11, RK11, or RK611 disk cartridge drive with an additional disk drive, or one of the following magnetic tape systems (for software distribution):
     TME11 controller with TE10 transport
     TMB11 controller with TS03 transport.

FOR VT55 GRAPHICS TERMINAL SUPPORT

  4. A VT55 graphics terminal with asynchronous serial line interface (in place of the console terminal).

FOR VT11 OR VS60 DISPLAY PROCESSOR SUPPORT AS A UNIBUS PERIPHERAL

  5. A VT11 or VS60 display processor.

RSX-11M, RSX-11D, IAS SUPPORT

- Any valid RSX-11M, RSX-11D, or IAS operating system configuration supporting either FORTRAN IV/IAS-RSX or FORTRAN IV-PLUS that includes:

  1. A UNIBUS PDP-11 processor.
  2. At least 48K bytes of memory.

3. An RL11, RK11, or RK611 disk cartridge drive and controller with an additional disk drive on one of the controllers, or one of the following magnetic tape systems (for software distribution):

    TME11 controller with TE10 transport

    TMB11 controller with TS03 transport

    TJE16 (TUE16 for PDP-11/70) controller with TE16 transport.

FOR VT55 GRAPHICS TERMINAL SUPPORT

4. A VT55 graphics terminal with any asynchronous serial line interface supported by the operating system.

FOR VT11 OR VT60 DISPLAY PROCESSOR SUPPORT AS A UNIBUS PERIPHERAL (RSX-11M only)

5. A VT11 display processor (display file must reside in the lowest 56K bytes of memory), or VS60 display processor.

6. Not more than 248K bytes of memory.

FOR VT11 or VS60 DISPLAY PROCESSOR SUPPORT AS A SATELLITE SYSTEM

7. A DL11 single-line asynchronous serial interface or one line of a DZ11 or DH11 multiplexer for each satellite system.

And one of the following display processor subsystems (satellite system must include FORTRAN IV (QP230) if FORTRAN IV-PLUS is run on the host system):

8. For VT11 support, one of the following:

    A GT41 or GT43 display processor subsystem.

    A UNIBUS PDP-11 processor, 32K bytes of memory, an asynchronous serial line interface compatible with a DZ11, DL11, or DH11, a programmer's processor console, an LA36 or LK40 terminal keyboard, and a VT11 display processor.

9. For VS60 support:

    The GT62 display terminal system or equivalent.

VAX SUPPORT

● Any valid VAX/VMS operating system configuration supporting VAX-11 FORTRAN IV-PLUS

For VT11 or VS60 Display Processor Support as a Satellite System:

1. One line of a DZ11 asynchronous multiplexer for each satellite system and one of the following display processor subsystems:

2. For VT11 support, one of the following
    A GT41 or GT43 display processor subsystem

    A UNIBUS PDP-11 processor, 32K bytes of main memory, an asynchronous serial line interface compatible with a DZ11, DL11 or DH11, a programmer's processor console, and LA36 or LK40 terminal keyboard and a VT11 display processor.

For VS60 Support
The GT62 display terminal system or equivalent.

OPTIONAL HARDWARE:
VT11 or VS60 based satellite display processor subsystems support the RX11 floppy disk system for local storage and loading of display files.

PREREQUISITE SOFTWARE:
One of the following operating systems is required:

● RSX-11M, Version 3.1, and either FORTRAN IV/IAS-RSX, Version 2, or FORTRAN IV-PLUS, Version 2.5

● IAS, Version 2, and either FORTRAN IV/IAS-RSX, Version 2, or FORTRAN IV-PLUS, Version 2.5

● RSX-11D, Version 6.2, and either FORTRAN IV/IAS-RSX, Version 2, or FORTRAN IV-PLUS, Version 2.5

Note that if FORTRAN IV-PLUS is selected for RSX-11M, RSX-11D, or IAS based host systems that FORTRAN IV will also be required for the graphic satellite.

● RT-11, Version 3B, SJ or FB monitors, and FORTRAN IV/RT-11, Version 2 or later

● VAX/VMS operating system, Version 1, and VAX-11 FORTRAN IV-PLUS, Version 1, and PDP-11 FORTRAN IV/VAX to RSX Cross Compiler.

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.

ORDERING INFORMATION:
All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

The following key (D, E, Q, T, V) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJ647-XD = sources on 9-track magnetic tape.

D = 9-track Magnetic Tape
E = RK05 Disk Cartridge
Q = RL01 Disk Cartridge
T = RK06 Disk Cartridge
V = RK07 Disk Cartridge

Standard Options

For RT-11 Systems:
QJ647 -X— Single-use license, source license, sources, documentation, support services (media: D, E, Q, T)

For RSX-11M, RSX-11D, or IAS systems:
QJ747 -X— Single-use license, source license, sources, documentation, support services (media: D, E, Q, T)

For VAX systems:
QE747 -X— Single-use license, source license, sources, documentation, support services (media: D, V)

Upgrade Options

The following option is available as an upgrade kit from RSX-11M Graphics Extensions, Version 2, for use on the same single CPU on which RSX-11M Graphics Extensions, Version 2, is licensed. The license previously granted for RSX-11M Graphics Extensions, Version 2, shall be extended to cover this upgrade.

This option is also available as an upgrade kit from FORTRAN/RT-11 Extensions for use on the same single CPU on which FORTRAN/RT-11 Extension is licensed. The license previously granted for FORTRAN/RT-11 Extensions shall be extended to cover this upgrade.

For RT-11 Systems:
QJ648 -X— Single-use license, source license, sources, documentation, support services (media: D, E, Q, T)

QJ648 -Y— Single-use license, source license, sources, documentation, no support services (media: D, E, Q, T)

For RSX-11M, RSX-11D, or IAS systems:
QJ748 -X— Single-use license, source license, sources, documentation, support services (media: D, E, Q, T)

QJ748 -Y— Single-use license, source license, sources, documentation, no support services (media: D, E, Q, T)

Update Options:

Users of FORTRAN Graphics Package, 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.

For RT-11 Systems:
QJ647 -N— Sources update (media: D, E, Q, T)

For RSX-11M, RSX-11D, or IAS Systems:
QJ747 -N— Sources update (media: D, E, Q, T)

Users of FORTRAN Graphics Package, 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 form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

For RT-11 Systems:
QJ647 -V— Sources update (media: D, E, Q, T)

For RSX-11M, RSX-11D, or IAS System:
QJ747 -V— Sources update (media: D, E, Q, T)

ADDITIONAL SERVICES:
None

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.