

# digital

# Software Product Description

**PRODUCT NAME: RT-11/FORTRAN Enhancement Package for MINC,**  
Version 1.1

**SPD 15.49.2**

**DESCRIPTION:**

The RT-11/FORTRAN Enhancement Package for MINC is a complete FORTRAN Systems Software Package. It consists of seven components:

- RT-11, Version 4.0 Real-Time Operating System (Refer to SPD No. 12.1 for specifics)
- FORTRAN IV/RT-11, Version 2.5 Compiler and Run-Time System (Refer to SPD No. 12.10 for specifics)
- SSP-11, Version 1.2 Scientific Subroutines Package (Refer to SPD No. 15.45 for specifics)
- LSP-11, Version 1.1 Laboratory Subroutine Package (Refer to SPD No. 15.44 for specifics)
- FDT — FORTRAN Debugging Technique
- INSTRUMENT Bus Subroutines, Version 1.1 Library for the control of IEEE-488 bus instruments, (Refer to SPD No. 12.14 for specifics) The Extended Memory (XM) monitor cannot be used while the instrument bus routines are being used.
- Real-Time control library for MNC-series modules (REAL-11/MNC)

SSP-11 supplies over 100 subroutines written in FORTRAN IV that provide the user with a large cross-section of those mathematical and statistical routines commonly required in scientific applications.

LSP-11 Processing Capabilities:

- Peak processing
- Envelope processing
- Interval histogramming
- Interval histogramming with reference points
- Fast fourier transform
- Phase angle and amplitude spectrum analysis
- Power spectrum analysis
- Correlation (auto/cross) functions

FDT enables users at the console terminal to "debug" their FORTRAN programs at the FORTRAN level. FDT provides step-by-step control of execution of the program and the ability to examine and change the contents of any variable during program execution.

Instrument Bus Subroutines allow the user to control the IEEE Bus through commands that control data transfer via the IB11 or IBV11-A.

REAL-11/MNC library provides subroutines that control the following MNC-series modules:

- MNCKW (programmable real-time clock)
- MNCAD (A/D converter)
- MNCAM (analog multiplexer)
- MNCAG (analog preamplifier)
- MNCAA (D/A converter)
- MNCDI (digital input)
- MNCDO (digital output)

This library provides multiple-buffered input and output sweeps (of analog or digital data) with FORTRAN completion routine support. Both post-stimulus and time interval histogram data can be acquired by a sub-routine. The library is self-configuring for the particular set of devices in the user's configuration.

The PLOT55 subroutine is included within RT-11 and supports a VT105 operating in VT55 compatibility mode. It is capable of plotting two single-valued functions with a resolution of 512 points on the X-axis and 190 points on the Y-axis in either point-plot or histogram mode.

**MINIMUM HARDWARE REQUIRED:**

Any valid MNC11-B, MNC11-C, MNC11-E, MNC11-J, MNC11-K, MNC11-L, MDL23-A, MDL23-B, or MDL23-C configuration.

**OPTIONAL HARDWARE:**

- Any Q-Bus disks supported by RT-11, Version 4.0
- Any Q-Bus line printer supported by RT-11, Version 4.0

*Terminals*

- Any terminal type supported by RT-11, Version 4.0

*Communication Device*

- Any Q-Bus devices supported by RT-11, Version 4.0

MODULE	DESCRIPTION	MAXIMUM NUMBER
MNCKW	Programmable Real-Time Clock	2
MNCAD	A/D Converter	1
MNCAM	Dual Multiplexer	7*
MNCAG	Preamplifier	5*
MNCAA	D/A Converter	8
MNCDI	Digital Input	8
MNCDO	Digital Output	8

\*MNCAD required

NOTE: The maximum number of MNC-series modules in use at any one time is eight.

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*Miscellaneous*

Seven additional IBV11-A options (subject to slot availability).

NOTE: The software can communicate through only one unit at a time.

**PREREQUISITE SOFTWARE:**

None

**OPTIONAL SOFTWARE:**

Any software that utilizes the RT-11 Operating System, Version 4.0.

**TRAINING CREDITS:**

None

This is a complete FORTRAN software package and contains standard software kits but the training credits for RT-11/FORTRAN Enhancement Package for MINC are determined solely by this SPD.

**SUPPORT CATEGORY:**

DIGITAL SUPPORTED

RT-11/FORTRAN Enhancement Package for MINC is a DIGITAL Supported Software Product.

**SOFTWARE INSTALLATION:**

DIGITAL INSTALLED

DIGITAL installation is required for Software Product Support. There is no charge for installation if performed at the time of system installation. DIGITAL installed software products, except for operating systems, are subject to an add-on installation fee when purchased subsequent to system installation.

**SOFTWARE PRODUCT SUPPORT**

RT-11/FORTRAN Enhancement Package for MINC includes standard warranty services as defined in the Software Support Categories Addendum of this SPD.

**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

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Options with no support services are only available after the purchase of one supported license.

A single-use license only option is a license to copy the software previously obtained under license.

The following key (H, Q, X, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QJV32-AQ = binaries on RL01 Disk Cartridge.

H = RL02 Disk Cartridge

Q = RL01 Disk Cartridge

X = RX02 Double Density Diskette

Z = No hardware dependency

The following options are available as software enhancement products for MINC systems.

QJV32 -A— Single-use license, binaries, documentation, support services (media: H, Q, X)

QJV32 -C— Single-use license, binaries, documentation, no support services (media: H, Q, X)

QJV32 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

*Update Options*

Users of RT-11/FORTRAN Upgrade Package for MINC-11 or users of FEP-11/FORTRAN Enhancement Package 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.

QJV32 -H— Binaries, documentation (media: H, Q, X)

QJV32 -H— Right to copy for single-use (under existing license), no binaries, no documentation (media: Z)

*Miscellaneous Options*

QJV32 -G— Documentation only kit (media: Z)

**ADDITIONAL SERVICES:**

Post-warranty Software Product Services for this software product are available with the prerequisite being the purchase of the RT-11 Self-Maintenance Service for Software. Customers should contact their local DIGITAL office for additional information.