

Software Product Description

PRODUCT NAME: Micro/RSX PDP-11 C, Version 1.2

SPD 09.31.03

DESCRIPTION

Micro/RSX PDP-11 C is a product of Mentec, Inc. and is licensed under Digital Equipment Corporation's Standard Terms and Conditions.

Micro/RSX PDP-11 C is a reliable language processor for Digital Equipment Corporation's proprietary operating systems on the PDP-11. PDP-11 C is highly compatible with the ANSI standard for the C language. Micro/RSX PDP-11 C can be used to develop code for inclusion into resident libraries and other low level system routines.

Micro/RSX PDP-11 C consists of the compiler, a Run-Time Library (RTL), and documentation.

The compiler produces machine code optimized for execution speed and memory efficiency. The compiler is highly compatible with the ANSI C standard, X3J11/90-013, February 14, 1990, and extends beyond ANSI requirements with several extensions for the PDP-11 family of central processors.

The compiler runs in native mode on the Micro/RSX host systems and produces PDP-11 object code compatible for all the supported target systems. The target systems are: RSX-11M, RSX-11S, RSX-11M-PLUS, Micro/RSX, RSTS/E, RT-11, and VAX-11 RSX. The Run-Time Library is provided in object form.

The Run-Time Library provides run-time support that allows the user to perform necessary functions not provided from within the compiler itself. These functions include:

- Native Standard I/O (STDIO) for each supported PDP-11 Operating System
- Arithmetic Operations
- Character Handling
- Localization
- Signal Handling
- Variable Arguments
- String Handling

Features

- Compatible with the ANSI C Standard (February 1990)
- Function prototypes for declaring and checking function argument count and types
- Structured programming control flow constructs:
 - if...else construct for simple selection
 - switch statement for multi-choice selection with an arbitrary number of case statements
 - while, do, and for statements for iterative execution
- Flow modification statements:
 - break
 - continue
 - goto
- Data type for numeric, non-numeric, and systems programming:
 - Byte, word, and longword signed and unsigned integers
 - Integer constants in decimal, octal, and hexadecimal radices
 - Support for void data type
 - Single-character variables and constants
 - Single and double-precision numbers
 - Pointer variables containing the addresses of other variables
 - Data aggregates including array, structures, and unions
 - User-define or enumerated (enum) data types with forward referencing allowed
- Storage allocation using:
 - Auto, static, register and extern storage allocation classes for variables
 - Keywords (globalref, globaldef, and globalvalue) for sharing data among program modules

- Psect Pragma for control of data attributes and data placement
- Preprocessor control statements for:
 - File inclusion
 - Identifier substitution
 - Conditional compilation
 - Object module identification via pragmas
 - List File control via pragmas
 - Data storage control via pragmas
 - Source and list character sets via pragmas
- Support for DEC multi-national character sets
- Separate compilation capabilities
- Compiler generated listing file including optional:
 - Expanded preprocessor substitution listing
 - MACRO-11 file
- Generated Code
 - EIS or FPU
 - PIC or NONPIC
 - I/D Space supported or non I/D space
- Position Independent Code (PIC) Supervisor Mode Run-Time Library for the RSTS/E, RSX-11M-PLUS, and Micro/R SX target systems
- Full support of RSX Executive Directives on RSX target system
- Support of RSX AST, RSX SST, and RSX CSM linkages to allow users to write:
 - Asynchronous system trap handlers
 - Synchronous system trap handlers
 - Supervisor mode library routines for RSX and RSTS/E systems

An Installation Verification Program (IVP) is provided to verify the installation of Micro/R SX PDP-11 C and its RTL. The tests include compile-time error reporting (compiler test).

HARDWARE REQUIREMENTS

Any valid Micro/R SX system configuration with:

- Minimum of 64K bytes of user memory

For systems that support separation of instruction and data (I/D) spaces, a minimum of 128K bytes or more of user memory is recommended for improved performance.

- At least 3,500-4,000 free disk blocks, 2,000 of which must be contiguous at compile time
- At least 5,500-8,000 free disk blocks, 2,000 of which must be contiguous — required during the installation procedure

These block counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration and software options selected.

- Extended Instruction Set (EIS)
- A device capable of reading one of the available distribution media

OPTIONAL HARDWARE

Floating Point Processor (as supported by the Micro/R SX Operating System configuration)

HARDWARE NOT SUPPORTED

The Floating Instruction Set (FIS) is not supported. The processors affected by this are:

- LSI-11
- LSI-11/2
- LSI-11/03

SOFTWARE REQUIREMENTS

Micro/R SX Operating System (Base Kit)

Refer to the Micro/R SX Software Product Description (SPD 14.28.xx) for the required version.

OPTIONAL SOFTWARE

None

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

MEDIA DISTRIBUTION

The distribution Media Codes are described below. Specify the desired Media Code at the end of the Order Number, e.g., QYV67-H3 = binaries on RX50 Floppy Diskette.

3 = RX50 Floppy Diskette
 5 = TK50 Cartridge Tape
 Z = No hardware dependency

ORDERING INFORMATION

Single-Use License: QYV67-UZ

Software Media/Documentation: QYV67-H*
 Software Documentation: QYV66-GZ
 Software Product Services: QYV67-**

* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

Note: The availability of these software product options and services may vary by country. Customers should contact their local Digital office for information on availability.

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This software is furnished under the licensing provisions of Digital Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, contact your local Digital office.

The software being licensed is warranted only if the hardware configuration on which the software is to be run is a configuration explicitly supported by the Micro/R SX Operating System (refer to SPD 14.28.xx).

SOFTWARE WARRANTY

Warranty for this software product is provided by Digital with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

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