

# Software Product Description

PRODUCT NAME: **Micro/RSX PDP-11 PASCAL, Version 1.3**

SPD 18.07.03

## DESCRIPTION

Micro/RSX PDP-11 PASCAL is an implementation of the PASCAL language that accepts programs compatible with Level 0 of the ISO Specification for the Computer Programming Language PASCAL (Draft International Standard 7185). Micro/RSX PDP-11 PASCAL is a multipass optimizing compiler that provides all standard Pascal data types and statements as well as extensions.

Micro/RSX PDP-11 PASCAL provides user mode instruction and data space (I & D Space) support on processors where both the hardware and software support this feature.

### Major PASCAL Language Elements

The data types, control statements, and predeclared functions and procedures provided by Pascal include:

- INTEGER, REAL, CHAR, BOOLEAN, enumerated and subrange data types
- ARRAY, RECORD, SET and FILE structured data types
- FOR, REPEAT, WHILE repetitive control statements
- CASE, IF-THEN, and IF-THEN-ELSE conditional statements
- BEGIN...END compound statement
- GOTO statement
- READ, WRITE, READLN, and WRITELN input and output procedures
- FORWARD procedure and function directive

### Micro/RSX PDP-11 PASCAL Extensions

- Support for Micro/RSX File Control System (FCS) sequential files with fixed or variable length records
- Sequential access to fixed or variable length records, and both direct and sequential access to fixed length records
- User Mode Instruction and Data space support on processors where both the hardware and software support this feature
- EXTERNAL procedure and function directive
- OTHERWISE clause in case statements

- REM operator to supply the remainder in division operations
- GLOBAL, LOCAL, and EXTERNAL attributes on variables and subprograms
- MODULE reserved word for separate and independent compilation
- STATIC and AUTOMATIC allocation attributes
- %INCLUDE directive to allow multiple compilation units to access the same program text
- Binary, hexadecimal, and octal constants
- Exponential operator
- Dollar sign (\$) and Underscore ( \_ ) characters in identifiers
- Value initialization in declaration section at program level
- Predefined procedures CLOSE, DATE, OPEN, TIME, and HALT

### Compilation

The Micro/RSX PDP-11 PASCAL compiler performs optimizations designed to improve execution speed, including constant conversion, constant pooling, and global register assignment. Optional instruction to the compiler and input and output file attributes are specified by compiler switches that:

- Perform run-time checks of array bound, case selectors, pointers, string bounds, and subrange bounds
- Limit the number of error messages printed and allow compilation to continue regardless of the number of errors
- Cause code to be generated that provides source line numbers at run-time
- Produce a machine-code listing
- Identify the Micro/RSX PDP-11 PASCAL compiler version number
- Print warning-level messages that identify the use of Micro/RSX PDP-11 PASCAL extensions
- Provide automatic spooling of the listing file

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*Task Building*

After compilation, the RSX Task Builder is used to produce an executable image file, and to provide support for both relocatable and resident object libraries. Task builder options create checkpointable tasks, identify the use of floating point hardware, provide On-line Debugging Technique (ODT) support and allow simultaneous execution of multiple versions of a single task.

*Micro/R SX Environment*

Micro/R SX PDP-11 PASCAL allows use of the FORTRAN standard calling sequence, permitting PASCAL programs to communicate with FORTRAN callable system routines for real-time applications. However, routines written in FORTRAN cannot be called from Micro/R SX PDP-11 PASCAL. In addition, Micro/R SX PDP-11 PASCAL programs can call Micro/R SX system services for process-control operations, system directives, and special peripheral access.

**HARDWARE REQUIREMENTS**

Any valid Micro/R SX system configuration with:

- KEF11-AA Floating Point Chip option or an FPF11 Hot Floating Point Processor Card
- A minimum of 34K words of available memory, with approximately 2050 free blocks of disk space required for the compiler and OTS files. Of the 2050 free blocks required, 585 blocks must be contiguous.
- Additional disk space is required during compiler execution. The amount of additional space required varies with the size and complexity of the source program.

**OPTIONAL HARDWARE**

None

**SOFTWARE REQUIREMENTS**

Micro/R SX Operating System Base Kit

Refer to the Micro/R SX Optional Software Cross Reference Table (SPD 20.95.xx) for the required version.

**OPTIONAL SOFTWARE**

Micro/R SX Advanced Programmers Kit (for ODT)

**GROWTH CONSIDERATIONS**

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

**SOFTWARE WARRANTY**

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**SOFTWARE OPTIONS CHART**

The distribution Media Codes used in the Software Options Chart are described below. You specify the desired Media Code at the end of the Order Number, e.g., QY806-H3 = binaries on a RX50 Floppy Diskette.

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

**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.

OPTIONS	ORDER NUMBER
<b>LICENSE OPTIONS:</b> A LICENSE IS REQUIRED FOR EACH CPU.	
Single-Use License	QY806-UZ
<b>MATERIALS AND SERVICE OPTIONS</b>	
Distribution and Documentation Option	QY806-H3 QY806-H5
Software Revision Right-To-Copy Option	QY806-HZ
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Installation Service Option	QY806-I3 QY806-I5
DECsupport Service	QY806-93 QY806-95
Basic Service	QY806-83 QY806-85
Self-Maintenance Service	QY806-33 QY806-35