

# DATA SHEET

## PASCAL-XT (BS2000/OSD)

### Version 2.2

#### Pascal-XT Programming System

Issue July 2016

Pages 3

## Pascal-XT (BS2000/OSD) is the BS2000 variant of the Pascal-XT compiler family.

### Product Characteristic

Thanks to the front-end common to all the compilers of this family, Pascal-XT program sources can be compiled on all computers supported.

The most significant characteristics of Pascal are:

- simple and systematic block-oriented structure,
- clear control structures,
- extensive data concept with user-defined, structured and dynamic data types,
- ease of learning,
- support of software engineering, and
- high runtime efficiency.

In addition, by means of suitable language elements and a high-performance programming system, Pascal-XT supports the efficient development of extensive software products with a long service life. It also has an integrated debugging aid.

The Pascal-XT programming system provides the user with a convenient environment for developing, compiling and testing programs interactively, without leaving the programming system.

Pascal-XT meets the requirements for Level 1 of the Pascal standards ISO 7185: 1983 and DIN 66256-1983.

### Functional Description

The main language extensions of Pascal-XT compared with standard Pascal are:

- modular concept and separate compilation analogous to Ada (packages).
- exception handling: error conditions at runtime can be handled by the application program
- string processing, using an approach similar to that of UCSD Pascal
- static expressions and structured constants
- inline procedures and functions with high-efficiency code
- predefined data types 'short integer', 'long integer', 'short real', 'long real' and generic file and pointer types
- any function result (all types other than file)
- ELSE in the CASE statement and in the variant declaration
- arbitrary declaration sequence
- EXIT statement for premature termination of a loop
- extensive set of additional standard procedures and functions

Via predefined packages, Pascal-XT programs are able to access BS2000/OSD service functions. These include,

amongst others, execution of BS2000 commands, process switch, DMS (in particular ISAM), error handling and UTM interface.

Pascal-XT programs can call programs written in other languages. In the opposite direction, programs written in other languages can call Pascal-XT programs.

The following facilities can be used in BS2000/OSD:

- Connection of PLAM program libraries,
- Convenient management of a software project (management of interface definitions among modules, semi-automatic recompilation, dependence information about modules, etc.),
- Menu-driven operation via SDF command processor,
- Comprehensive compiler listings: source program listing, error listing, cross-reference listing and memory address listing,
- Expansion options for programming system by means of individual user commands,
- Generation of optimized object code,
- Code generation for runtime tests,
- Maximum precision in standard mathematical functions SIN, COS, ARCTAN, EXP, LN and SQRT, Accuracy to 1 ulp (unit in the last place).

Debugging aid and generated code:

The Pascal debugging aid allows Pascal-XT programs to be tested symbolically without the object code being known. The essential functions are:

- symbolic referencing of program blocks,
- setting of breakpoints,
- displaying and modifying of program data,
- output of the dynamic call chain,
- testing of recursive procedures and functions,
- conditional execution of debugging commands.

If no debugging commands are activated, this has no effect on the runtime of the programs.

The compiler-generated code

- is reentrant,
- is virtually error-proof,
- includes runtime tests (optional),
- can be optimized, if desired,
- detects runtime errors.

## Program Description

The Pascal-XT programming system comprises the following parts:

- Pascal-XT compiler (Pascal-XT)
- Pascal-XT runtime system PAS-XT-LZS
- programming environment
- integrated symbolic debugging aid at the Pascal-XT language level (PATH).

The Pascal-XT programming system can be installed in two ways:

- **Static linking:**

The compiler is linked to a phase with the programming system, runtime system and debugging aid. Each caller loads his own programming system.

- **In the common memory pool:**

The code modules of the compiler, programming system, runtime system and debugging aid are placed in the common memory pool and can be used jointly by various callers.

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## TECHNICAL DETAILS

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### PASCAL-XT V2.2

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#### Technical Requirements

##### Hardware

BS2000/OSD Business Server

##### Technical Requirements

##### Software

BS2000/OSD-BC as of V1.0

Optional software requirements:

AID for symbolic testing

##### Operating mode

Batch and interactive mode

##### Implementation language

Pascal-XT and Assembler

##### User interface

German / English

##### Installation

Notes on installation can be found in the relevant Release Notices.

#### Documentation

Pascal-XT Language Description

Pascal-XT User Guide

The manuals are available in German and English.

The documentation is available as online manuals, see <http://manuals.ts.fujitsu.com/mainframes.html>, or in printed form which must be paid for and ordered separately at

<http://manuals.ts.fujitsu.com>

#### Demands on the user

Knowledge of the programming language Pascal and of BS2000/OSD

#### Training

See course offer at:

<http://training-mediasever.ts.fujitsu.com/elearningmedia/catalog>

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