

CUSTOMER NOTIFICATION

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## Device File for 78K0S Series

### DF789222 (V1.10)

## User's Manual

[Supported machines/OS]

PC-9800 Series (Windows™ Based)

IBM PC/AT™ Compatibles (Windows Based)

Be sure to read this document before using the product.

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## 1. OUTLINE

A device file is a binary file that contains device-dependent information and is prepared for each device model or for each product in the same series.

Device files are commonly used with development tools (such as assembler, compiler, and debugger). Employing device files enables generation and debugging of device-unique codes. In addition, when developing applications, device files enable the SFR names unique to the device being used to can be used for programming.

The DF789222 contains device files necessary for developing applications using the 78K0S/KA1+ in the 78K0S Series.

## 2. CONTENTS OF PACKAGE

The device files included in this product and the corresponding devices are as follows.

**Table 2-1. Contents of Package**

Type	Device File Name	Corresponding Device Name	Device Specification Name	Version
Device file	DF9221.78K	$\mu$ PD78F9221	F9221	V1.10
	DF9222.78K	$\mu$ PD78F9222	F9222	V1.10

The Device Specification Name is the character string specified as “-c *device specification name*” (device type specification option), “#pragma pc(*device specification name*)” in C source in the CC78K0S (C compiler), and “\$PROCESSOR(*device specification name*)” in assembler source in the RA78K0S (assembler).

### 3. USER ENVIRONMENT

Like development tools, device files are available for Windows.

User environment for device files is as follows.

Machine	Operating System
PC-9800 series, IBM PC/AT compatible machines	Windows NT 4.0
	Windows 98
	Windows 2000
	Windows Me
	Windows XP

### 4. CORRESPONDING VERSIONS OF DEVELOPMENT TOOLS

The corresponding versions of the DF789222 and 78K0S Series development tools made by NEC Electronics are shown below. Use these tools in the following combinations.

Tool Used	Version of Corresponding Tool
C compiler package CC78K0S	V1.30 or later
Assembler package RA78K0S	V1.30 or later
Integrated debugger ID78K0S-NS	V2.31 or later

**Caution** The DF789222 does not support the system simulator SM78K0S.

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PC/AT is a trademark of International Business Machines Corporation.

## 5. INSTALLATION

Device files are included on one floppy disk. Use the device file installer (DFINST) included in the NEC Electronics development tools to install the device file.

**Note** A self-extraction file (an execution file) is downloaded along with device files with ODS (online delivery service). If this file is executed, a disk image is created. Copy this to hard disk or to a floppy disk and then begin the installation process.

The installation procedure is explained below.

- (1) Start Windows.
- (2) Start the device file installer (DFINST). If the NEC Electronics development tool has been installed in the standard directory, the device file installer will be in *installed drive\Nectools32\bin*.
- (3) If installing from the floppy disk, insert the floppy disk in the floppy disk drive.
- (4) Click the **Install** button.
- (5) If installing from the floppy disk, use the **FD Browse** button to display the path where the disk image (icon) is located. Use the **Browse** button to do this if installing from hard disk.
- (6) Necsetup.ini file and \_csetup.ini file are displayed in the file list of the dialog box that appears after step (5). Select \_csetup.ini to install the English version and Necsetup.ini to install the Japanese version.
- (7) Follow the installation wizard to continue installation.

## 6. USAGE

Refer to the user's manual of each tool listed in **7. RELATED DOCUMENTS** for details of how to use the device file.

## 7. RELATED DOCUMENTS

The documents related to the DF789222 are listed below.

User's Manuals
78K0S/KA1+
78K/0S Series Instruction
CC78K0S C Compiler Package Operation
CC78K0S C Compiler Package Language
RA78K0S Assembler Package Operation
RA78K0S Assembler Package Language
RA78K0S Assembler Package Structured Assembly Language
ID78K0S-NS Integrated Debugger Operation

## 8. DEFAULT LINK DIRECTIVE INFORMATION

Each device has different ROM and RAM capacities. The assembler package has default link directive information necessary to relocate the user's program and data in the device file according to the ROM capacity and RAM capacity of each product.

In order to change the setting of the default, the user should create a link directive for each target system according to the memory configuration of the actual target system using the assembler package (linker). Note that user's program, data, and stack may not be appropriately located in the default link directive information. This means, for example, that user's data and stack may be located overlapping the register bank area and the reserved area of the C compiler.

The default link directive information depends on the device as shown below.

The area name ROM and RAM are essential area names. All the code segments (CSEG) are relocated in the area name ROM area and all the data segments (DSEG) and bit segments (BSEG) are relocated in the area name RAM area unless otherwise specified explicitly in the MERGE statement.

Device	Default Link Directive Information
$\mu$ PD78F9221	MEMORY ROM: (00000H, 00800H) MEMORY RAM: (0FE80H, 00180H)
$\mu$ PD78F9222	MEMORY ROM: (00000H, 01000H) MEMORY RAM: (0FE00H, 00200H)

In the above table, area RAM includes the SFR area (0FF00H to 0FFFFH). Note that, however, since the linker handles the SFR area as a reserved area, the segments (user's data and stack) are not relocated in this area. For example, the result for "MEMORY RAM: (0FE80H, 00180H)" and "MEMORY RAM: (0FE80H, 00080H)" is the same.

## 9. REVISION HISTORY

### 1. V1.10

(1) First edition