

CUSTOMER NOTIFICATION

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Yoshiro Harada, Senior System Integrator  
Microcomputer Group  
2nd Solutions Division  
Solutions Operations Unit  
NEC Electronics Corporation

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## Device File for 78K0 Series

### DF780024 (V1.02)

### 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 DF780024 contains device files necessary for developing applications using the microcontrollers of the  $\mu$ PD780024, 780024Y Subseries or  $\mu$ PD780024AS, 780034AS Subseries in the 78K0 Series (except some products).

## 2. CONTENTS OF PACKAGE

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

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

Types	Device File Name	Corresponding Device Name	Device Specification Name	Version
Device file	D0021.78K	$\mu$ PD780021, 780021A	0021	V1.02
	D0022.78K	$\mu$ PD780022, 780022A	0022	V1.02
	D0023.78K	$\mu$ PD780023, 780023A	0023	V1.02
	D0024.78K	$\mu$ PD780024, 780024A	0024	V1.02
	D0021Y.78K	$\mu$ PD780021Y, 780021AY	0021Y	V1.02
	D0022Y.78K	$\mu$ PD780022Y, 780022AY	0022Y	V1.02
	D0023Y.78K	$\mu$ PD780023Y, 780023AY	0023Y	V1.02
	D0024Y.78K	$\mu$ PD780024Y, 780024AY	0024Y	V1.02
	D0021AS.78K	$\mu$ PD780021AS	0021AS	V1.02
	D0022AS.78K	$\mu$ PD780022AS	0022AS	V1.02
	D0023AS.78K	$\mu$ PD780023AS	0023AS	V1.02
	D0024AS.78K	$\mu$ PD780024AS	0024AS	V1.02
FPGA data file	G0034.78K			
Database file	S002X.78K, S002XY.78K, S002XAS.78K			

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 CC78K0 (C compiler), and “\$PROCESSOR(*device specification name*)” in assembler source in the RA78K0 (assembler).

The FPGA data file is required when using the integrated debugger ID78K0.

The database file is required when using the system simulator SM78K0. This file is also included in the SM78K0. Installation of the database file can be selected when installing the device file and the SM78K0.

It is recommended to use the latest version of the database file. If this file already exists when the database file is being installed using a device file installer, you are asked if you want to overwrite the file. At this time, confirm the time stamp and make sure that the file being installed is the latest version (note, however, that this file is always overwritten when installing the SM78K0).

The file is not necessary when using the integrated debugger ID78K0-NS or ID78K0. Therefore, you don't have to install this file.

### 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 DF780024 and 78K0 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 CC78K0	V3.30 or later
Assembler package RA78K0	V3.50 or later
Integrated debugger ID78K0-NS	V2.31 or later
Integrated debugger ID78K0	V2.30 or later
System simulator SM78K0	V2.40 or later

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## 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 DF780024 are listed below.

User's Manuals
$\mu$ PD780021, 780022, 780023, 780024 Data Sheet
$\mu$ PD780024AS, 780034AS Subseries
78K0 Series Instruction
CC78K0 C Compiler Package Operation
CC78K0 C Compiler Package Language
RA78K0 Assembler Package Operation
RA78K0 Assembler Package Assembly Language
RA78K0 Assembler Package Structured Assembly Language
ID78K0-NS Integrated Debugger Operation
ID78K0 Integrated Debugger Operation
SM78K0 System Simulator Operation

## 8. REVISION HISTORY

### 1. V1.00

- (1) First edition

### 2. V1.01

- (1) Correction of the following bugs

The value of the following register may be changed when it is read.

Therefore, its attribute has been changed to read-only (redraw disable flag).

- TXS0 [18h]: R [redraw disabled]

- (2) Addition of the following devices [Targets are NS products only]

- $\mu$ PD780024AS, 780023AS, 780022AS, 780021AS

- (3) Modification of menu at installation

- Selection method of product has been changed from check box format to radio button format

### 3. V1.02

- (1) Correction of errors found in V1.01

- Correction of illegal trace data and illegal display of SFR data.

01 00000093 0000FF45 → 01 000000D3 0000FF45 ;EMR11