

CUSTOMER NOTIFICATION

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Device File for 178K Series

DF178098 (V1.01)

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.

CONTENTS

1. OUTLINE	3
2. CONTENTS OF PACKAGE	3
3. USER ENVIRONMENT.....	3
4. CORRESPONDING VERSIONS OF DEVELOPMENT TOOLS	4
5. INSTALLATION	4
6. USAGE	4
7. RELATED DOCUMENTS	5
8. REVISION HISTORY	5

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 DF178098 contains device files necessary for developing applications using the 178K Series microcontrollers μ PD178098, 178098A Subseries.

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	D8076.78K	μ PD178076	8076	V1.01
	D8078.78K	μ PD178078	8078	V1.01
	D8096.78K	μ PD178096	8096	V1.01
	D8098.78K	μ PD178098	8098	V1.01
	D8F098.78K	μ PD178F098	8F098	V1.01

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).

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

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

4. CORRESPONDING VERSIONS OF DEVELOPMENT TOOLS

The corresponding versions of the DF178098 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

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 button.
- (5) If installing from the floppy disk, use the button to display the path where the disk image (icon) is located. Use the 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 DF178098 are listed below.

User's Manuals
μ PD178098, 178098A Subseries
78K/0 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

8. REVISION HISTORY

1. V1.00

- (1) First edition

2. V1.01

- (1) Correction of errors found in V1.00

<1> Modification of memory information [guard area] **[Target device: μ PD178F098]**

- 0000F800-0000F8FF 000E 08 → 0000F800-0000F9FF 000E 08

<2> Addition of member information of the following SFRs ([Undefined] → [IE bus control function])

[Target devices: μ PD178096, 178098, 178F098]

- BCR0 [B0h], ENSLVRX [B0h bit 3], ENSLVTX [B0h bit4], ALLRQ [B0h bit 5], MSTRQ [B0h bit 6], ENIEBUS [B0h bit 7], UAR [B2h], UARL [B2h], UARH [B3h], SAR [B4h], SARL [B4h], SARH [B5h], PAR [B6h], PARL [B6h], PARH [B7h], CDR [B8h], DLR [B9h], DR[BAh], USR[BBh], LOCK[BBh bit 2], ACK[BBh bit 3], ALLTRNS [BBh bit 4], ARBIT [BBh bit 5], SLVRQ [BBh bit 6], ISR [BCh], ENDFRAM [BCh bit 2], ENDTRNS [BCh bit 3], STATUSF [BCh bit 4], STARTF [BCh bit 5], IEERR [BCh bit 6], SSR [BDh], STATTX [BDh bit 0], STATRX [BDh bit 1], STATLOCK [BDh bit 2], STATSLV [BDh bit 4], SCR [BEh], CCR [BFh]

<3> Modification of [CPU EVA] information **[Target devices: All products]**

- 01 00000047 0000FF45 → 01 000000C7 0000FF45 EMR11 (CPUWR/CPUWRL control)
- 01 00000001 0000FF45 → 01 00000000 0000FF45 EMBS6 (PU0 not provided)

<4> Modification of [CPU EVA] information **[Target device: μ PD178076]**

- 01 000000CF 0000FFFC → 01 000000CC 0000FFFC EMR0 (ROM: 60K → 48K)
- 01 00000066 0000FFFD → 01 0000006E 0000FFFD EMR1 (IRAM: 2K → 3K)

<5> Modification of [CPU EVA] information **[Target devices: μ PD18076, 178078]**

- 01 000000FD 0000FF45 → 01 00000000 0000FF45 EMBS22 (IEBUS not provided)
- 01 000000FF 0000FF45 → 01 00000000 0000FF45 EMBS23 (IEBUS not provided)

- <6> Modification of [CPU EVA] information [**Target devices: μ PD178098, 178F098**]
- 01 00000002 0000FF45 → 01 00000000 0000FF45 EMRBS10 (no register for controlling E2PROM)
- <7> Modification of [CPU EVA] information [**Target device: μ PD178098**]
- 01 000000FC 0000FF45 → 01 00000000 0000FF45 EMRBS11 (no register for controlling UART0)
- <8> Deletion of connection information of the following SFR [**Target device: μ PD178098**]
- RXB0
- <9> Deletion of connection information of the following SFR [**Target devices: μ PD178076, 178078**]
- TXS0
- <10> Modification of memory information [program memory area] [**Target devices: μ PD178076, 178096**]
- 00000000 0000BFFF 000B 05/ 0000F400 0000F7FF 000B 05
→ 00000000 0000F7FF 000B 05
- <11> Modification of protect information of the following SFRs [**Target devices: μ PD178076, 178078**]
- WDCC [42h], TOC0 [7Eh]
- <12> Addition of protect information to the following SFR [**Target devices: μ PD178076, 178078**]
- CSIM0 [60h]
- <13> Addition of protect information to the following SFRs [**Target devices: μ PD178096, 178098, 178F098**]
- IF1L [E2h], MK1L [E6h], PR1L [EAh]
- <14> Modification of access attribute of the following SFRs from R/W to read-only
- PAR [B6h], PARL [B6h], PARH [B7h] [**Target devices: μ PD178096, 178098, 178F098**]
- <15> Deletion of protect information of the following SFRs [**Target devices: μ PD178096, 178098, 178F098**]
- PAR [B6h], PARH [B7h]
- <16> Modification of protect information of the following SFR [**Target devices: All products**]
- PCC [FBh]
- <17> Addition of protect information to the following SFRs [**Target devices: μ PD178096, 178098**]
- PLLNS [A3h], IF0H [E1h], MK0H [E5h], PR0H [E9h]
- <18> Modification of protect information of the following SFRs [**Target device: μ PD178F098**]
- PLLNS [A3h], IFCCR [ACh]

Remark "Protect information" is information that is used to check the accessible data patterns.