

To our customers,

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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**Be sure to read this note.**

# M3T-PD77SIM V.3.10 Release 1A

## Release note

Second Edition  
Renesas Solutions Corporation  
February 16 2006

### Abstract

Welcome to M3T-PD77SIM V.3.10 Release 1A (called PD77SIM).

This material explains the contents of this software, installation procedure, and supplements to the user's manual and help. When using this software, please take a look at this release note as well as the user's manual.

\*\* You can get the latest version of this document from our homepage: Homepage. (<http://www.renesas.com/en/tools>)

## Contents

<b>1</b>	<b>COMPONENTS OF THE PRODUCT</b> .....	<b>3</b>
<b>2</b>	<b>OPERATING ENVIRONMENT</b> .....	<b>4</b>
<b>3</b>	<b>INSTALLATION</b> .....	<b>5</b>
3.1	TO INSTALL PD77SIM .....	5
3.2	USER REGISTRATION.....	5
3.3	TO INSTALL ACROBAT READER .....	5
<b>4</b>	<b>A REQUEST CONCERNING TECHNICAL SUPPORT</b> .....	<b>7</b>
4.1	TECHNICAL SUPPORT BY E-MAIL.....	7
4.2	TECHNICAL SUPPORT BY FAX .....	7
4.3	TECHNICAL SUPPORT BY HOMEPAGE.....	7
<b>5</b>	<b>NOTES</b> .....	<b>8</b>
5.1	TREATMENTS OF FILES AND DIRECTORIES .....	8
5.2	ON THE UPLOAD FUNCTION .....	8
5.3	ON C LANGUAGE DEBUG FUNCTION .....	8
<b>6</b>	<b>SUPPLEMENTS TO THE USER'S MANUAL</b> .....	<b>9</b>
6.1	TO USE THE IAR C COMPILER.....	9
<b>7</b>	<b>REGARDING I/O SCRIPT SAMPLE PROGRAMS</b> .....	<b>10</b>
<b>8</b>	<b>REGARDING CB77SIM AND CUSTOM FUNCTION</b> .....	<b>10</b>
<b>9</b>	<b>VERSION REPORT</b> .....	<b>11</b>
9.1	PD77SIM V.3.10 RELEASE 1, PD77SIM V.3.10 RELEASE 1A .....	11
9.2	PD77SIM V.3.00 RELEASE 1 .....	11

9.3 PD77SIM V.2.00 RELEASE 1 ..... 13

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## 1 Components of the Product

PD77SIM V.3.10 Release 1A comprises the following. The License ID Certificate/User Registration Sheet is not included for version up.

### 1. Software disk

The following file is installed when setup.exe of PD77SIM is carried out.

- PD77SIM.EXE Ver.3.10.00
- P77SDLL.DLL
- SIM77.EXE Ver.2.10.00
- I/O script sample programs
- PD77SIM.HLP

The following software is being attached as a service software.

- CB77SIM.EXE Ver.1.01.00
- MA.EXE, MADLL.DLL
- MC.EXE, MCDLL.DLL
- MCPP.EXE, MCPPDLL.DLL
- ML.EXE, MLDLL.DLL
- CB77SIM's library files
- CB77SIM's include files
- CB77SIM's sample programs
- CB77SIM.HLP

#### (1) electronic manual

PD77SIM V.3.10 User's manual	pd77sue.pdf
Introducing I/O Script Sample Programs	pd77sse.pdf
CB77SIM V.1.01 User's manual	cb77sue.pdf
CB77SIM V.1.01 Programming manual	cb77supe.pdf
The introduction of the sample programs for CB77SIM	cb77sse.pdf

### 2. PD77SIM V.3.10 Release 1A Release note

This note contains "Software User License Agreement".

### 3. License ID Certificate / User Registration Sheet

- If any of the above is missing, contact either Renesas Technology Corporation's office or its distributor from which you purchased the product.
- Please read a License Agreement before using. By using the software, you are accepting and agreeing to such terms.
- The S/W Tool User Registration Sheet is used for maintenance service for you.

## 2 Operating Environment

PD77SIM runs on the host machine environments given below.

**Table 1:Host Machine Environments**

Host Machine	IBM PC/AT compatibles
Operating System	Windows Me Windows 98 Windows XP* <sup>1</sup> Windows 2000* <sup>1</sup> Windows NT 4.0
CPU	Pentium166MHz or higher is recommended.
Memory	64MB or more

\*<sup>1</sup>The use PD77SIM, you must have rights for writing to the directory which has installed PD77SIM and Windows XP/2000.

### 3 Installation

The installation procedure of PD77SIM changes in the operating system of the host machine.

#### [Notes for Windows XP/2000/NT 4.0]

Make sure that installer is executed by one who is authorized as an Administrator. No one but the user who has the authority of an Administrator can install the PD77SIM.

#### 3.1 To install PD77SIM

Registers in Windows by installing PD77SIM.

1. Start of installer  
Please execute "Setup.exe", which is in the ¥PD77SIM¥W95E folder of the product CD-ROM, from Explorer or any other launcher program.
2. License ID  
In "License ID" dialog box, Please select the "Normal License" and input license ID. License ID(xxxx-xxxx-xxxx-xxxx-xxxx) is described in license ID Certificate. (appended to the product package)
3. Display of product license  
The "Software License Agreement" dialog box displays the content of the license agreement. Please read the content of the contract.
4. Input of user information  
In "Customer Information" dialog box, please input customer information (License User, Belong To, Your Addresses, and PC types). Input information becomes a format of a customer support by mail.
5. Selection of component  
In "Select Components" dialog box, please select the installed component. This dialog box can change the directory the installation ahead.
6. End of the installer  
The installation of PD77SIM is complete, when the dialog box which indicates "Setup is complete".

#### 3.2 User Registration

The text file for the user registration is created to the start menu. Please input a necessary matter to the text file and send it to the registration desk (regist\_tool@renesas.com) in our company by e-mail. To open the text file for the user registration, please select the following menu:

Windows Menu [Start]->[Program]->[RENESAS-TOOLS]->  
[PD77SIM V.3.10 Release 1A]->[User Registration Sheet]

If you would like to register your information by FAX, please fill in the contents of the License ID certificate and send it to the registration desk (81-6-6398-6191).

#### 3.3 To install Acrobat Reader

The manual of PD77SIM is offered as an electronic manual. Acrobat Reader is necessary to refer to an electronic manual. Please install Acrobat Reader if necessary. Acrobat Reader can be downloaded from the home page of the Adobe Systems Incorporated products.

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URL for Adobe Systems Incorporated: <http://www.adobe.co.jp/>

## **4 A Request Concerning Technical Support**

### **4.1 Technical support by E-mail**

The text file for the technical support is created to the start menu. Please fill in it and send it to your nearest Renesas office or its distributor by E-mail. To open the text file for technical support, please select the following menu:

Windows Menu [Start]->[Program]->[RENESAS-TOOLS]->  
[PD77SIM V.3.10 Release 1A]->[Technical Support Sheet]

### **4.2 Technical support by FAX**

Please fill in the “Technical Support Communication Sheet”, which is the last page of User’s Manual, and send it to your nearest Renesas office or its distributor by FAX.

#### **[Notes for technical support]**

We appoint the types of host machines (IBM PC/AT compatibles, for example) as an operation environment for using our software tools. This does not guarantee operation on all the types of the host machines or in any environment of them (device drivers, peripheral units, etc.), but merely for indicating an operation environment we assume (to be put to our support). If a trouble should occur in using the software tools in the operation environment we appointed, we offer a technical support to solve the trouble (correct the defective condition, inform a way of avoiding the trouble, and so forth).

If a trouble that occurred in your environment cannot be reproduced in our operation environment, we may ask a favor of you to solve the trouble (we may borrow your equipment with your approval). We would like to obtain your prior approval.

### **4.3 Technical support by Homepage**

Our homepage in the following URL provides datasheets, toolnews, FAQ and the other informations of our products.

Home Page: <http://www.renesas.com/en/tools>

Another access is:

Windows Menu [Start]->[Program]->[RENESAS-TOOLS]-> [(Link Page for) RENESAS Tools HomePage]

## 5 Notes

### 5.1 Treatments of Files and Directories

PD77SIM runs under Windows Me/98/XP/2000/NT 4.0, but the following points should be noted:

1. Use only one period in a filename.
2. You cannot use a network pathname. You must allocate a drive.
3. Note the following constraints:
  - Do not use directory names or filenames that include blanks.
  - You cannot use "." to specify two levels upper directories.

### 5.2 On the Upload function

The machine language files created by the upload function of PD77SIM are for use to debug. Please use the RASM77 for making the machine language file to written into ROM.

### 5.3 On C Language Debug Function

When debugging C language programs in **PD77SIM**, pay attention to the following:

1. It is possible that the C compiler locates different variables at the same address for optimization purpose. In such a case, when you see C variable display on C Watch Window, etc., you will find the same address being displayed for different variables.
2. If you use the -O, -OR, or OS options when compiling, it is likely that part of source line information is modified for optimization purpose. In such a case, debugging in PD77SIM is subject to limitations that it cannot execute the STEP command correctly, for example. Therefore, when specifying the -O, -OR, or OS options and you do not want the source line information to be modified, you need to use the -ONBSD (or -Ono-Break\_source\_debug) option to prevent this problem.
3. When the variables referred in the C language are allocated in the assembler language, the variables are not displayed in the C Watch Window or the Global Window. For example, you can not see the variable P0 in the C Watch Window or the Global Window.

#### Assembler file

```
.ORG 003E0H
_P0: .BLKB 1
      :
      :
```

#### C file

```
extern unsigned char P0;
void main( void )
{
    P0 = 0x01;
    :
    :
}
```

## 6 Supplements to the User's Manual

This section supplements description of the user's manual and software specifications or the like added or altered after the user's manual has been made. Please use it along with the user's manual.

### 6.1 To use the IAR C Compiler

#### 6.1.1 In the case of using the IAR Embedded Workbench

Please specify the project setting by following process.

(1) The Setting in the IAR Embedded Workbench

When you select the menu [Project] -> [Options...], the dialog for "Options For Target "*target*" will open. In this dialog, please select the "XLINK" as category, and set the project setting.

- The "Output" tab

In the "Format" area, check the "Other" option, and select the "ieee-695" as "Output Format".

- The "Include" tab

In the "XCL File Name" area, specify your XCL file (ex: lnk77.xcl).

(2) Edit the XCL file

Add the command line option "-ylmb" to your XCL file.

(3) Build your program after the setting above.

#### 6.1.2 In the case of using from the command line

When you compile the program, specify the option "-r", and when you link the program, specify the options "-f lnk77.xcl", "-FIEEE695", "-ylmb".

Example:

```
ICC7700 -r file1.c
```

```
ICC7700 -r file2.c
```

```
XLINK -o filename.695 -f lnk77.xcl -FIEEE695 -ylmb file1 file2
```

(Note)

We don't check the other options. Therefore, we recommend not to add other options.

## 7 Regarding I/O Script Sample Programs

PD77SIM has a I/O script function as a means of simulating the operation of internal devices (e.g., timers and CRC arithmetic circuits).

Try using the I/O script sample program included with this product. It contains a description of internal device operation.

For details about specifications of and the method for using this I/O script sample program, refer to the electronic manual, "Introducing I/O Script Sample Programs."

## 8 Regarding CB77SIM and Custom Function

For details about the functions of and the method for using CB77SIM, refer to the electronic manuals, "CB77SIM User's Manual," "CB77SIM Programming Manual," and "The introduction of the sample programs for CB77SIM."

CB77SIM and custom window functions are the service tools attached to PD77SIM.

This technical support copes with it by inserting the newest information in the homepage.

(URL : <http://www.renesas.com/en/tools>)

And, as for the question which fills the following condition, approve it in advance because it becomes support within our possible span though it lets me cope with it by electronic mail.

(It has the possibility that we can't necessarily meet all question and requests.)

- Ask me a question by electronic mail at our company support counter.  
([support\\_tool@renesas.com](mailto:support_tool@renesas.com))
- Attach the source file of the sample program and binary to the electronic mail when you ask it a question about faulty operation of the custom window which a customer made.(As for the program, remove all the parts which aren't concerned with the true nature of the problem.)

## 9 Version Report

This section describes the specification of the changed software.

### 9.1 PD77SIM V.3.10 Release 1, PD77SIM V.3.10 Release 1A

In this version, the following specifications were changed from former version PD77SIM V.3.00 Release 1.

#### 9.1.1 Correction of Restrictions

- A limitation has been corrected that when the memory content at a 2-byte or 4-byte watch point starting from an odd address is altered in the ASM Watch Window, a communication protocol error occurs.  
(for detail, refer to the MESC TOOL NEWS, December 1, 1999 )
- A limitation has been corrected that when the program that executes the subtract instruction in the decimal mode is run in PD77SIM, the accumulator will be loaded with incorrect values.  
(for detail, refer to the MESC TOOL NEWS, April 16, 2000 )
- A limitation has been corrected that when operating in the Program or Source window's Source dialog box (opened from View -> Source button/menu) a Windows error message is displayed and the operation is forcibly terminated.  
(for detail, refer to the MESC TOOL NEWS, June 16, 2000)
- A limitation has been corrected that when it downloaded IEEE-695 absolute format files (hereafter called 695-format files) created by IAR's C compiler ICC7700 (EW7700), the part of programs beyond address 100000h cannot correctly be downloaded.  
(for detail, refer to the MESC TOOL NEWS, September 1, 2000)
- A limitation has been corrected that if any structure whose member names exceed 1,024 characters in total is displayed on the C Watch, Global, File Local, or Local window, the debugger may be forcibly terminated.  
(for detail, refer to the MESC TOOL NEWS, October 16, 2000 )
- A limitation has been corrected that if you try to open dialog boxes (for setting breakpoints and changing windows etc.) during execution of target programs, those dialog boxes may not appear, and the subsequent operations become frozen.  
(for detail, refer to the MAEC TOOL NEWS, May 16, 2001)
- A limitation has been corrected that debuggers may be terminated forcibly when variables are entered in the C watch window.  
(for detail, refer to the MAEC TOOL NEWS, August 1, 2001)
- A limitation has been corrected that if a Windows application is launched or any of the other already-opened Windows applications is made active while you are downloading a target program (a load module), the debugger may freeze suddenly.  
(for detail, refer to the MAEC TOOL NEWS, December 16, 2001)
- A limitation has been corrected that the Source window may not be opened or not display materials normally if opened.  
(for detail, refer to the MAEC TOOL NEWS, December 16, 2001)
- A limitation has been corrected that when the value of the minuend loaded in the accumulator or memory is 0 before the operation is performed using any of the subtraction instruction shown below, the V flag will not be set to 1 if the result of the operation overflows.  
(for detail, refer to the MAEC TOOL NEWS, October 16, 2002)
- A limitation has been corrected that simulator debugger may be hung when coverage data is set.  
(for detail, refer to the MAEC TOOL NEWS, December 16, 2002)

#### 9.1.2 Specification Changes

- It supported to source level debugging of the assembler source when using IAR Systems C compiler ICC7700 (Workbench EW7700).

### 9.2 PD77SIM V.3.00 Release 1

In this version, the following specifications were changed from former version PD77SIM V.2.00 Release 1.

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### 9.2.1 Functional Extensions

- Window-related
    - Program/source window
      - A function that displays C variable on the popup window when in the source display mode and the mouse cursor is placed on the C variable for a certain period of time has been added.
      - A function that displays measurement results of coverage has been added.
      - Operation has been facilitated by right-click menus that let you jump to the selected function, or let you register items on the C watch window of the selected variable.
      - You can now change the characters and background color of text, PC line or coverage line.
      - You can now switch from disassemble display mode to source display mode or mix display mode even if the start addresses don't match.
      - The system now switches automatically to the selected display mode if the pause position of the target program can be displayed by the display mode selected from the menu or tool bar (program window only).
    - Dump/memory window
      - A Japanese code display function has been added. SJIS or JIS code characters can now be displayed when in word display mode.
      - You can now set a range of addresses selected by the cursor (Start, End) as the start and end addresses for Fill or Move dialog boxes.
    - C watch window
      - C watch display RAM monitor  
You can now view C variables while the target program is running.
      - Radix can now be changed for each variable.
      - If C variables are array type, you can now expand and display the elements of the array. Now you can also display the object of the pointer if the C variables are pointer type.
    - Script window
      - A function that records executed commands in a file has been added. Unlike a logging function, only the command itself is recorded so the saved file can be used as a script file.
  - Script commands
    - MOVEWord command added  
This command moves a memory in the Word unit.
  - Others
    - Addition of download history function  
A function that displays a list of files (4) for which download has been executed at the bottom of the file menu has been added. You can re-download a file by selecting it from the list.
    - Addition of automatic download function when updating load module  
A function that automatically downloads when the target program is updated has been added.
    - Addition of file format that can be downloaded from a menu  
You can now select file formats supported by script command only (Intel HEX format, IEEE-695 absolute format, etc.) from the menu.
    - C address input support  
You can now input all addresses (dialog, etc.) in both ASM or C.
    - Addition of GoFree menu  
Free run which used to be supported by GoFree command only can now be executed from the menu.
    - Addition of scope switch dialog box  
The scope setting function which used to be supported by SCOPE command is now supported by GUI.
    - Addition of Options menu  
A function for customizing PD77SIM operation has been added.
-

- Additional operators that can be used with I/O scripts  
It is now possible to use operators && and || with I/O scripts.
- Correspondence with IAR C compiler

### 9.2.2 Specification Changes

- Window-related
  - Register window  
Size of the window has been reduced, and font change is now supported.

## 9.3 PD77SIM V.2.00 Release 1

In this version, the following specifications were changed from former version PD77SIM V.1.00 Release 1.

### 9.3.1 Correction of Restrictions

- A limitation that when Motorola S format files are generated using the upload function, checksum for the end record (last line) is not output correctly has been corrected. For details about this problem, refer to the tool news dated July 1, 1998, "Requests to Be Observed When Using PD30, PD30SIM, PD77, PD77SIM, PD79, PD79SIM, XDB30, or XDB30SIM."  
**Supplement:**

The machine language files generated by the debugger's upload function are intended for use in debugging. When you create the machine language file to be written into the final product ROM, please use the load module converter or HEX file converter included with your compiler package.

- A limitation that when port emulation is functioning, repeating target program execution or stepping operation may cause the simulator engine to lost control of executing the target program has been corrected. For details about this problem, refer to the tool news dated August 1, 1998, "Requests to Be Observed When Using PD77SIM V.1.00 Release 1."

### 9.3.2 Functional Extensions

- Window-related
  - I/O window added  
This window is used to set or display virtual port input, virtual port output, and virtual interrupt. Settings of virtual port input and virtual interrupt and the results of virtual port output can be referenced in chart, numeric, or graph form.
  - GUI input window added  
It allows you to create a simple key input panel (buttons) of the user target system on a window and perform virtual port input or virtual interrupt by pressing the buttons you've created.
  - GUI output window added  
It allows you to implement a simple output panel of the user target system on a window.
  - MR window added  
This window displays the status of the real-time OS.
- Script commands
  - MR command added  
This command displays the status of the real-time OS.
- Others
  - I/O script function  
It allows you write settings of virtual port input or virtual interrupt to a file in script form.
  - Function to specify directory in which to create temporary file  
If an on-demand method is specified when downloading the target program, the system creates a temporary file. A function to specify directory in which to create temporary file has been added in this version. Use the Init dialog box to specify the direction in which you want a temporary file to be created.
  - Make function  
The operation to "Make" the target program that was conventionally performed by entering commands from the DOS

window can now be performed from PD77SIM.

### 9.3.3 Specification Changes

- Window-related
  - Program/source window  
A function has been added that allows you to line-assemble from a specified position.
- Script commands
  - PORT command  
The PORT command, which was used to emulate ports, has been deleted.
  - INTerRupt command  
The INTerRupt command, which was used to generate pseudo-interrupts, has been deleted.
- Others
  - Software break  
Even when the target program is running, you can break it by setting a software breakpoint during execution.