

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

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Renesas Electronics Corporation

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## Read This Before Using This Product

Renesas Solutions Corp.  
Microcomputer Tool Development Department

The M30870T-EPB is an emulation probe for the M32C/87 Group MCUs. This document describes the information necessary to use this product. Read this BEFORE using the product.

### 1. Applicable Emulator Debugger

- (1) M32C PC7501 Emulator Debugger (which runs on the integrated development environment High-performance Embedded Workshop)
- (2) M3T-PD308F V.3.20 Release 1

### 2. Downloading the MCU file and firmware for this product

You need to update the MCU file and firmware file to the latest version. Download the firmware “m30870f.s” and MCU file “m30870.mcu” and “m30870\_ad.mcu” from the web site below. For operations details, refer to the web site.

<http://tool-support.renesas.com/eng/toolnews/download/m30870t-epb.htm>

File name	Version	Description
m30870fw_mcu_file_installer20070801.zip	-	Compressed installer file for M32C PC7501 emulator debugger
m30870t-epb20070801.zip	-	Compressed MCU and firmware file for M3T-PD308F

#### (1) M32C PC7501 emulator debugger

1. Before copying the downloaded files, verify that the M32C PC7501 emulator debugger is installed on your computer. If your emulator debugger is not the latest version, update it using AutoUpdate Utility.
2. Download the compressed installer file “m30870fw\_mcu\_file\_installer20070801.zip” from the web site above to the host machine where the M32C PC7501 emulator debugger is installed, and decompress it.
3. Execute the installer file “m30870fw\_mcu\_file\_installer20070801.exe” to install the emulator debugger. Follow the instruction on the screen to perform the installation.

#### (2) M3T-PD308F V.3.20 Release1 (discontinued product)

1. Before copying the downloaded files, verify that the emulator debugger M3T-PD308F is installed on your computer. If your M3T-PD308F is not the latest version, update it.
2. Download the compressed MCU and firmware file “m30870t-epb20070801.zip” from the web site above to the host machine where the emulator debugger M3T-PD308F is installed, and decompress it.
3. Copy the MCU file and firmware file following the procedure below.
  - 1) Copy “**m30850.mcu**”, “**m30870.mcu**” and “**m30870\_ad.mcu**” to the directory (Mcufiles) that contains MCU files.
  - 2) Copy “**m30870f.s**” to the directory that contains the emulator debugger execution file “pd308f.exe”.

- (3) Downloading the new firmware file
1. After copying the MCU file and firmware file by following the procedure (1) or (2), download the firmware file **after starting in maintenance mode**, referring to “2.7 Downloading Firmware” in the M30870T-EPB User’s Manual.
  2. To check that the firmware is downloaded properly, execute the self-check following the procedure below after downloading the firmware.
    - If the user system is connected, disconnect it.
    - Reset the switch setting inside the emulation probe to its factory setting.For details on the self-check, refer to “2.8 Self-check” in the M30870T-EPB User’s Manual.

(4) Selecting an MCU file

1. “m30870.mcu”  
When selecting AN00-AN07 or AN20-AN27 for analog input port select bits (bit2 and bit1 of 0394h), port P15 can be used as an I/O port and intelligent I/O pin. However, external trigger mode (ADtrg and three-phase timer B2) cannot be used. When using the “m30870.mcu”, **set all the SW5 switches of the M30870T-EPBM to “OFF”**. The factory settings of the SW5 switches are “OFF”.
2. “m30870\_ad.mcu”  
For external trigger mode, use the “m30870\_ad.mcu”. In this case, set analog input port select bits (bit2 and bit1 of 0394h) as follows.
  - 1) To select AN0-AN7 or AN150-AN157 for analog input port select bits:  
Set all the SW5 switches of the M30870T-EPBM to “ON”.
  - 2) To select AN00-AN07 or AN20-AN27 for analog input port select bits:  
Setting the SW5 switches of the M30870T-EPBM will enable to set analog input pin by each individual pin. **Set the pins used for the A/D conversion to “ON” and the pins not used to “OFF”**. Port P15 corresponding to a selected bit needs to be set to “input”.

For the specifications of the SW5 switches and how to set them, see “2.10.1 (2) Notes on Switch SW5” in the M30870T-EPB User’s Manual. To use multi-port sweep mode, set all the SW5 switches of the M30870T-EPBM to “ON”.

### 3. Notes on Using This Product

- (1) If using this product when the voltage of VCC1 is higher than that of VCC2, the CPU clock must be 24 MHz or less.
- (2) If using a CPU clock of more than 24MHz, set the SFR area of the intelligent I/O function to 2-wait (set the PM13 bit to “1”) when reading this area. This precaution only needs to be observed when using an emulator, and does not apply for the actual MCU.
- (3) When the CPU rewrite program is allocated to the expansion emulation memory, the program may run out of control. For the CPU rewrite program, use an internal RAM area or an external resource on the user system. This precaution only needs to be observed when using an emulator, and does not apply for the actual MCU.
- (4) The default value of Debug Monitor Bank Address is “F0” in EMEM dialog box of the emulator debugger. To set single-chip mode or memory expansion mode, internal flash memory is automatically allocated in F000h-FFFFh and F0000h-FFFFFFh. Therefore, change the Debug Monitor Bank Address to an area which does not start from "F0". The specified value becomes valid after restarting the system.

### 4. Inquiries

For technical information on this product, fill in the text file which is downloaded from the following URL, then send the information to your local distributor.

<http://tool-support.renesas.com/eng/toolnews/registration/support.txt>