

## Notes on Using This Product

Renesas Solutions Corp.  
Microcomputer Tool Development Department

The M30870T-EPB is an emulation probe for the M32C/87 Group MCUs. Please download MCU files and a firmware file required from our website when you use this product.

### 1. Applicable Emulator Debugger

M3T-PD308F V.3.20 Release 1

### 2. Downloading MCU Files and a Firmware

You can download the files shown below from our web site.

File name	Version	Description
m30870_a.mcu	-	MCU file
m30870_ad_a.mcu	-	MCU file
m30850f.s	V.1.04.20	Firmware file

(1) Please download the firmware "m30850f.s", MCU files "m30870\_a.mcu" and "m30870\_ad\_a.mcu" from the web site below (available from December 1, 2004).

<http://tool-support.renesas.com/eng/toolnews/n041201/download.htm>

(2) Using the MCU file "m30870\_a.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\_a.mcu", **set all the SW5 switches of the M30870T-EPBM to "OFF"**. The factory-settings of the SW5 switches are "OFF".

(3) Using the MCU file "m30870\_ad\_a.mcu"

For external trigger mode, use the "m30870\_ad\_a.mcu".

In this case, set analog input port select bits (bit2 and bit1 of 0394h) as follows.

i) To select AN0-AN7 or AN150-AN157 for analog input port select bits:

Set all the SW5 switches of the M30870T-EPBM to "**ON**".

ii) 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 page 40 of the M30870T-EPB User's Manual.

To use multi-port sweep mode, set all the SW5 switches of the M30870T-EPBM to "**ON**".

### 3. Using This Product

(1) The default value of Debug Monitor Bank Address is "F0" in EMEM dialog box of the emulator debugger M3T-PD308F. To set single-chip mode or memory expansion mode, internal flash memory is automatically allocated in F000h-FFFFh and F00000h-FFFFFFh. Therefore, change the Debug Monitor Bank Address to an area which does not start from "F0". The specified value becomes effective after restarting the system.

(2) If using this product when the voltage of VCC1 is higher than that of VCC2, the CPU clock must be 24 MHz or less.

- (3) If using a CPU clock of 30MHz or more, 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.
- (4) 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. How to Use This Product

- (1) Copying an MCU file and firmware file  
Before copying the downloaded files, install the emulator debugger M3T-PD308F. Then copy the MCU file and firmware following the procedure below.
  1. Copy "**m30870\_a.mcu**" and "**m30870\_ad\_a.mcu**" to the directory (Mcufiles) that contains MCU files.
  2. Copy "**m30850f.s**" to the directory that contains the emulator debugger execution file "pd308f.exe".

- (2) Downloading Firmware  
It is necessary to download the firmware in the following cases. The emulator debugger automatically starts downloading the firmware when:
  - you use this product for the first time
  - the firmware has been upgraded
  - the emulator debugger has been upgraded
  - you use this product with a PC7501 which was used with another emulation probe before

When the power is unexpectedly shut down during firmware download or when the communication interface cable is pulled out, redownload the firmware in maintenance mode following the procedure below. The target system must not be connected when downloading the firmware.

1. Set the interface select switch on the rear panel of the PC7501 to the LPT side and connect the LPT parallel interface cable to the PC7501 and the host machine.
2. Within 2 seconds of activating power to the emulator, press the RESET switch on the PC7501 upper panel to switch to maintenance mode.
3. Switched to maintenance mode, the SAFE SYSTEM STATUS LED begins to flash.
4. Start up the emulator debugger. When the Init dialog box setup is complete, the dialog which urges to download the firmware will appear. Download the firmware following the messages. Required time for downloading the firmware is about 60 seconds.

For details, refer to "2.7 Downloading Firmware" (page 26) of the M30870T-EPB User's Manual.

- (3) Self-check  
To check that the emulation probe operates normally, execute the self-check after downloading the firmware following the procedure below.
  1. If the target system is connected, disconnect it.
  2. Within 2 seconds of activating power to the emulator, press the system reset switch on the emulator upper panel to switch the emulator to maintenance mode.
  3. Check the "SAFE" LED starts flashing and then press the system reset switch again.
  4. The self-check will start. If the normal result is displayed in about 30 seconds, the self-check terminated normally.

For details, refer to "2.8 Self-check" (page 27) of the M30870T-EPB User's Manual.

#### 5. Inquiries

For technical information on this product, fill in the text file the installer of the emulator debugger generates in the following directory and email to your local distributor.

\\SUPPORT\product name\SUPPORT.TXT