RENESAS Tool News

Notes on Using Emulator Debuggers M3T-PD308F and M3T-PD30F

Please take note of the following problems in using emulator debuggers M3T-PD308F for the M32C/80 series MCUs in the M16C family and M3T-PD30F for the M16C/60 series in the above family:

- On using the MR STK command
- On using the Coverage window, the CV FUNC, and the CV TOTAL command

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1. **Products and Versions Concerned**
   M3T-PD308F V.1.00 Release 1 through V.2.00 Release 1
   M3T-PD30F V.1.00 Release 1

2. **Problem on Using the MR STK command**

   2.1 Description

   Measuring a task's stack usage by using the "MR STK, SYS" or "MR STK, TSK" command brings an incorrect result.

   2.2 Workaround

   The correct value of stack usage is obtained as follows:
   1. Execute the "MR STK, SYS" or "MR STK, TSK [, Task ID]" to check for the stack area to be measured.

   [Example: Checking for the stack area of the task whose task ID is 4]
   ```
   ----------------------------------------------------------------------
    >MR STK, TSK, 4
    [ 4] _task4   (00113AH-00119DH) : 0.00% <- Stack area (00113AH--
   00119DH)
           Stack size(used)  is  0 bytes.
           Stack size(whole) is  100 bytes.
   ----------------------------------------------------------------------
   ```

   2. Setting of a coverage measurement range

(a) In the M3T-PD308F

Set a coverage measurement range such a way that it covers the stack area checked for in 1 above by using the "CV BASE , Beginning Address of Stack" command.

Note that the range is settable in steps of 256 KB.

[Example]

```
-------------------------------------------------------------------

  >CV BASE, 00113A

-------------------------------------------------------------------
```

Type the command as shown above, and then a 256-KB range (0--3FFFF) including the specified address (113AH) will be set.

(b) In the M3T-PD30F

Setting of a coverage measurement range is unnecessary.

3. Execute the "CV CLEAR" command to initialize coverage measurement information.

4. Take the coverage measurement by executing the program in the range where stack usage is measured.

5. Execute the "CV LOCAL, Beginning Address, Ending Address" command to display the measurement result.

[Example: Display of the coverage measurement result of
       a range of 00113A--00119D]

```
---------------------------------------------------------------------------
>CV LOCAL, 113A, 119D
      + 0...............1...............2...............3...............
ADDRESS.>
0123456789ABCDEF0123456789ABCDEF0123456789ABCDEF0123456789ABCDEF

001100
001140
001180        ********************


---------------------------------------------------------------------------
```

[NOTICES]

(1) When specifying addresses with CV LOCAL, select an even address as the beginning address and an odd address as the ending one.

(2) Coverage measurement is taken in steps of 2 bytes. Then, even when a separate even or odd address only is accessed by target MCU, the measurement is done as if a pair of bytes were accessed.

6. In the display of the measurement result, the '*'s denote the addresses that were accessed. In the above example, an area from the stack's beginning address 119DH to address 1188H were accessed, which gives the stack usage at the program execution being 22 bytes.

2.3 Schedule of Fixing the Problem
We plan to fix this problem in our next release of the products.

3. Problem on using the Coverage Window, the CV FUNC, and the CV TOTAL Command

3.1 Description
Coverage measurement results may incorrectly be displayed when the Coverage window, the CV FUNC, and the CV TOTAL command are used.

3.2 Conditions
This problem occurs if either of the following conditions is satisfied:

(1) The beginning address of the function displayed by using the Coverage window and the "CV FUNC" command is an odd address or the ending address of it is an even address.

(2) The beginning address specified by the "CV TOTAL" command is an odd address or the ending address specified by it is an even address.

3.3 Workaround
To display coverage measurement results, select an even address as the beginning address and an odd address as the ending one by using the CV TOTAL command.

[Example: Addresses 00100A0 and 00100FF selected as the beginning and ending addresses]
```
-------------------------------------------------------------
  >CV TOTAL, 00100A0, 00100FF
-------------------------------------------------------------
```

NOTICE:
Coverage measurement is taken in steps of 2 bytes. Then, even when a separate even or odd address only is accessed and saved on the stack, the measurement is done as if a pair of bytes were accessed.

3.4 Schedule of Fixing the Problem

We plan to fix this problem in our next release of the products.

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