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April 1st, 2010
Renesas Electronics Corporation

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R8C/Tiny Series

General-purpose Program for Transferring Blocks

1. Abstract

This program transfers memory contents from one location to another by using a block transfer instruction (SMOVF).

2. Introduction

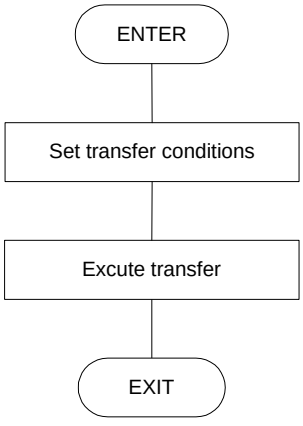
This program transfers memory contents from one location to another by using a block transfer instruction (SMOVF).

The program sets the number of transfers performed in R3, the high-order 4 bits of the source's start address in R1H, the low-order 16 bits of the source's start address in A0, and the destinations's start address in A1 before executing the SMOVF instruction.

Subroutine name : -	ROM capacity : 14 bytes
Interrupt during execution : Accepted	Number of stacks used : None

Register/memory	Input	Output	Usage condition
R0	-	-	Unused
R1H	-	High-order 4 bits of last source address	High-order half of source address
R1L	-	-	Unused
R2	-	-	Unused
R3	-	0000_{16}	Number of transfers performed
A0	-	Low-order 16 bits of last source address	Low-order half of source address
A1	-	Last address at destination	Destination address
BLOCK1	Content of BLOCK1	Does not change	←
BLOCK2	Content of BLOCK2	Content of BLOCK1	←
Usage precautions			

3. Flowchart



4. The example of a reference program

```
;***************************************************************************
;                                                                          *
;    M16C Program Collection No. 2                                        *
;    CPU            : R8C/Tiny                                             *
;                                                                          *
;***************************************************************************
VramTOP         .EQU        000400H                 ; USER PROGRAM RAM START ADDRESS
VromTOP         .EQU        00D000H                 ; 12Kbyte Flash version
;                                                   ;
                .SECTION    RAM,DATA                ;
                .ORG        VramTOP                 ; RAM area
LENGTH              .EQU        10                  ; Length of area
BLOCK1:             .BLKB       LENGTH              ; Source area of transfer
BLOCK2:             .BLKB       LENGTH              ; Destination area of transfer
;===========================================================================
;    Title: Transferring blocks
;    Outline: Example for using block transfer instruction
;    Input:    ------------------------------>  Output:
;    R0L ( )                                   R0L (Unused)
;    R0H ( )                                   R0H (Unused)
;    R1L ( )                                   R1L (Unused)
;    R1H ( )                                   R1H (Indeterminate)
;    R2  ( )                                   R2  (Unused)
;    R3  ( )                                   R3  (Indeterminate)
;    A0  ( )                                   A0  (Indeterminate)
;    A1  ( )                                   A1  (Indeterminate)
;    Stack amount used: None
;    Notes:
;===========================================================================
                .SECTION    PROGRAM,CODE            ;
                .ORG        VromTOP                 ; ROM area
    MOV.W       #LENGTH,R3                          ; Sets number of transfers performed
    MOV.W       #BLOCK1 & 0FFFFH,A0                 ; Sets low-order half of the source address
    MOV.B       #BLOCK1>>16,R1H                     ; Sets high-order half of the source address
    MOV.W       #BLOCK2,A1                          ; Sets destination address
    SMOVF.B                                         ; Executes transfer of blocks
;                                                   ;
                .END                                ;
```

5. Reference

SOFTWARE MANUAL
R8C/Tiny Series SOFTWARE MANUAL
(Acquire the most current version from Renesas web-site)

6. Web-site and contact for support

Renesas Web-site

http://www.renesas.com

Contact for Renesas technical support

Mail to : support_apl@renesas.com

REVISION HISTORY

Rev.	Date	Description	
		Page	Summary
1.00	Dec 24, 2003	-	First edition issued

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