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April 1st, 2010
Renesas Electronics Corporation

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M16C/60 Series and M16C/20 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

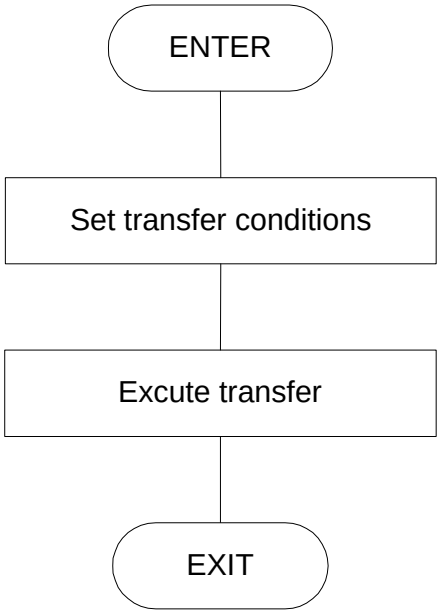
This program transfers memory contents from one location to another by using a block transfer instruction (SMOVF).

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 General-purpose Programs *
; CPU : M16C *
; *
;***********************************************************************
VramTOP     .EQU     000400H                ; Declares start address of RAM
VromTOP     .EQU     0F0000H                ; Declares start address of ROM
;                                           ;
            .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
M16C/60 M16C/20 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	Jul 08, 2002	-	First edition issued

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