

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics Corporation

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## R8C/Tiny Series

### General-purpose Program for Changing Blocks

#### 1. Abstract

This program changes memory contents consisting of the same number of bytes with each other memory location.

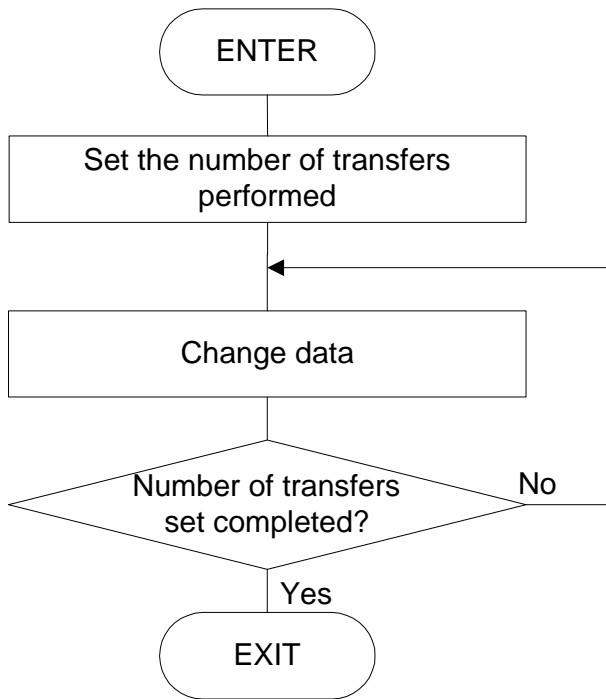
#### 2. Introduction

This program changes memory contents consisting of the same number of bytes with each other memory location. An add and conditional branch instruction (ADJNZ) is used to count the number of transfers performed. In this program, memory contents basically are changed in bytes. However, if the memory contents to be changed consist of even bytes, they can be changed in words for increased speed of processing.

Subroutine name : -	ROM capacity : 17 bytes
Interrupt during execution : Accepted	Number of stacks used : None

Register/memory	Input	Output	Usage condition
R0L	-	Last data of BLOCK2	Register used for change
R0H	-	-	Unused
R1	-	-	Unused
R2	-	-	Unused
R3	-	-	Unused
A0	-	0000 <sub>16</sub>	Number of transfers performed
A1	-	-	Unused
BLOCK1	Content of BLOCK1	Content of BLOCK2	←
BLOCK2	Content of BLOCK2	Content of BLOCK1	←
Usage precautions	Memory contents are changed in bytes.		

3. Flowchart



## 4. The example of a reference program

```

*****
;
;
; M16C Program Collection No. 3
; 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            ; Area 1
BLOCK2:    .BLKB   LENGTH            ; Area 2
;
;
=====
; Title: Changing blocks
; Outline: Changes data in units of blocks.
; Input:  -----> Output:
; R0L ( )      R0L (Indeterminate)
; R0H ( )      R0H (Unused)
; R1L ( )      R1L (Unused)
; R1H ( )      R1H (Unused)
; R2 ( )       R2 (Unused)
; R3 ( )       R3 (Unused)
; A0 ( )       A0 (Indeterminate)
; A1 ( )       A1 (Unused)
; Stack amount used: None
; Notes:
;
=====
; .SECTION  PROGRAM,CODE
; .ORG     VromTOP                  ; ROM area
MOV.B     #LENGTH,A0                ; Sets number of transfers performed
LOOP:
MOV.B     BLOCK1-1[A0],R0L           ;
XCHG.B   R0L,BLOCK2-1[A0]           ; Changes data
MOV.B     R0L,BLOCK1-1[A0]           ;
ADJNZ.W   #-1,A0,LOOP                ; --> Looped for the number of transfers performed
;
;
; .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](mailto:support_apl@renesas.com)

### REVISION HISTORY

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

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