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瑞萨电子公司

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H8/300L Super Low Power 系列

根据表的转移

要点

设定对应 1 个字（2 个字节）命令的处理程序的起始地址。

动作确认器件

H8/38024

目录

1. 参数

内容		保存位置	数据长度（字节）
输入	命令	R0	2
	数据表的起始地址	R1	2
输出	处理程序的起始地址	R4	2
	有无指令	C 标志（CCR）	

2. 内部寄存器变化和标志变化

R0	R1
×	×
R2	R3
×	•
R4	R5
○	•
R6	R7
×	•

I	U	H	U
•	•	×	•
N	Z	V	C
×	×	×	○

•：不变，×：不定，○：结果

3. 程序设计

程序存储器（字节）
28
数据存储器（字节）
0
堆栈（字节）
0
时钟周期数
74
重入
可
再定位
可
中途中断
可

4. 注意事项

规格的时钟周期数是执行完图 5-1 的例子时的值。

5. 说明

5.1 功能

(1) 参数的详细内容如下：

R0 ：输入参数，设定命令（2 个字节）。

R1 ：输入参数，设定保存 R0 命令和处理程序起始地址的数据表的起始地址。

R4 ：输出参数，设定 R0 命令的处理程序的起始地址（2 个字节）。

C 标志（CCR）：输出参数，表示软件 CCASE 执行后的状态。

C 标志= 1：表示在数据表中有与设定在 R0 的命令一致的数据。

C 标志= 0：表示在数据表中没有与设定在 R0 的命令一致的数据。

(2) 软件 CCASE 的执行例子如图 5-1 所示。

一旦如①设定输入参数，就参照图 5-2 的数据表，如②将处理程序的起始地址设定到 R4。

(3) 在执行软件 CCASE 时，预先需要如图 5-2 所示的数据表。

以下说明有关图 5-2 的数据表：

(a) 从 H’FD80 地址开始的 4 个字节（2 个字）数据群以及从表示数据表结束的定界符 H’0000。

(b) 按高位字节到低位字节的顺序，给 2 个字的数据群的第 1 个字设定命令以及给第 2 个字设定命令处理程序的起始地址。

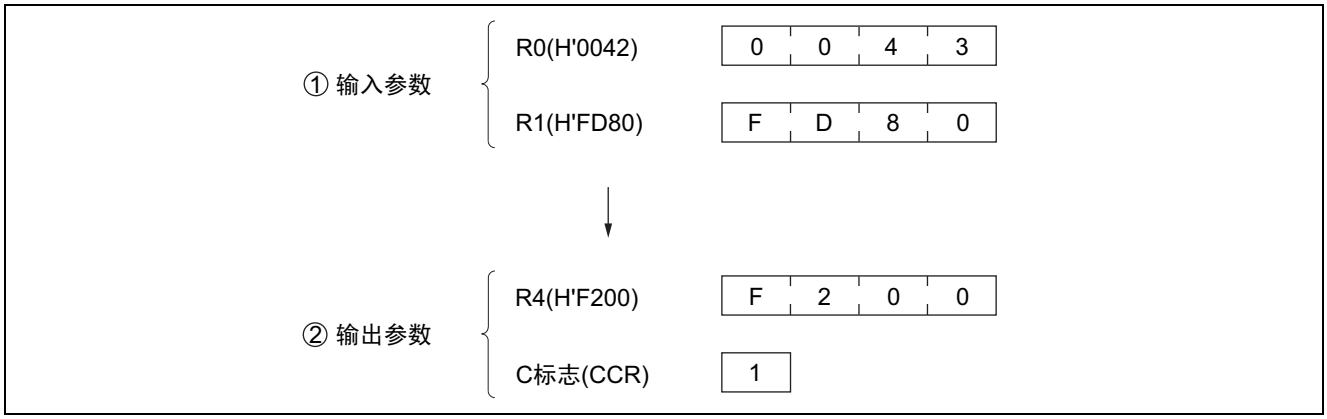


图 5-1 软件 CCASE 的执行例子

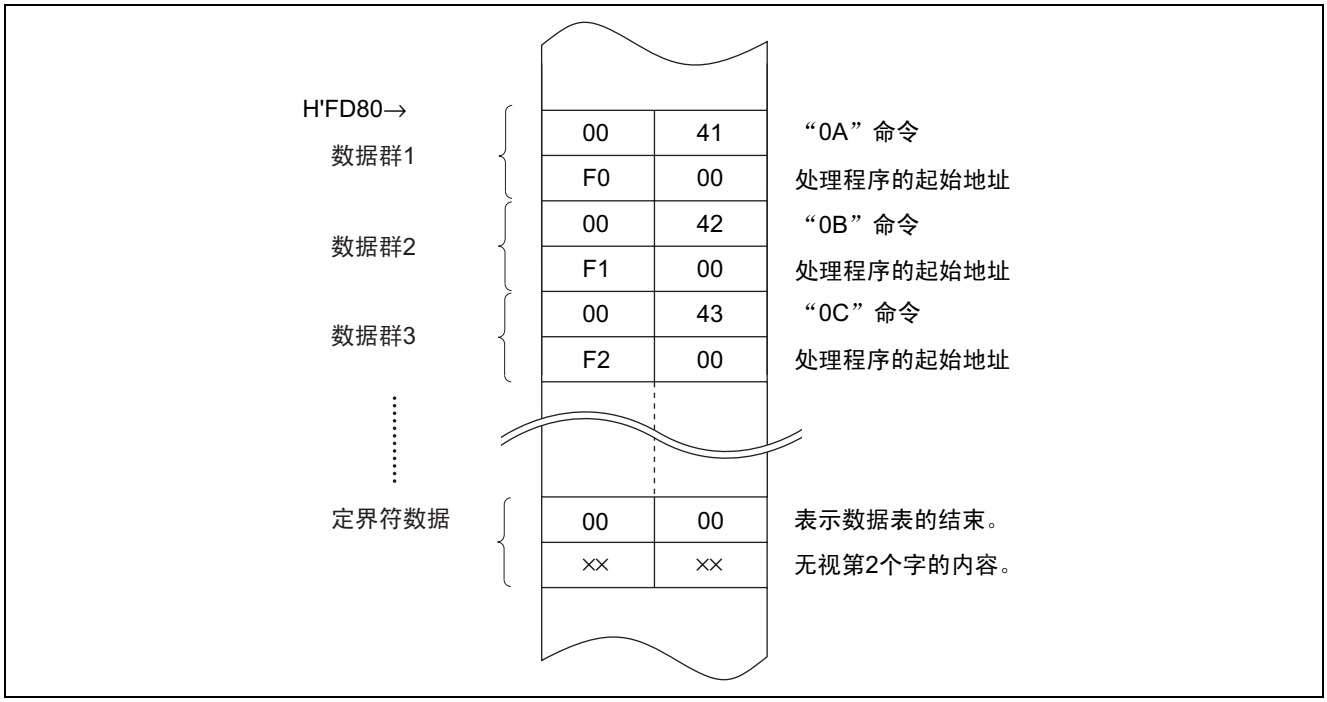


图 5-2 数据表的例子

5.2 使用时的注意

(1) 因为 H’0000 用作定界符，所以不能将 H’0000 用作数据表中的命令。

5.3 数据存储器的说明

软件 CCASE 不使用数据存储器。

5.4 使用例

设定命令和数据表的起始地址，子程序调用软件 CCASE。

```
WORK1    .RES.B   1                    …… 确保由用户程序设定命令的数据存储区。
         :
         MOV. W   #DTABLE, R1          …… 将由用户程序设定的数据表起始地址
                                          设定到输入参数。
         MOV. B   @WORK1, R0L          …… 将由用户程序保存的命令设定到输入参数。
         JSR      @CCASE               …… 子程序调用软件CCASE。
         Bcc      ERROR                …… 如果没有与数据表上的命令一致的数据，
                                          就转移。
         转向处理程序的程序*
         :
ERROR    错误程序                      …… 执行错误程序。
         :
         .SECTION  D-TABLE,  DATA,  ALIGN=2
DTABLE   .DATA.W   H'0041              "0A"命令
         .DATA.W   H'F000              "0A"命令的处理程序的起始地址
         .DATA.W   H'0042              "0B"命令
         .DATA.W   H'F100              "0B"命令的处理程序的起始地址
         .DATA.W   H'0043              "0C"命令
         .DATA.W   H'F200              "0C"命令的处理程序的起始地址
         :
         .DATA.W   H'0000              定界符数据
```

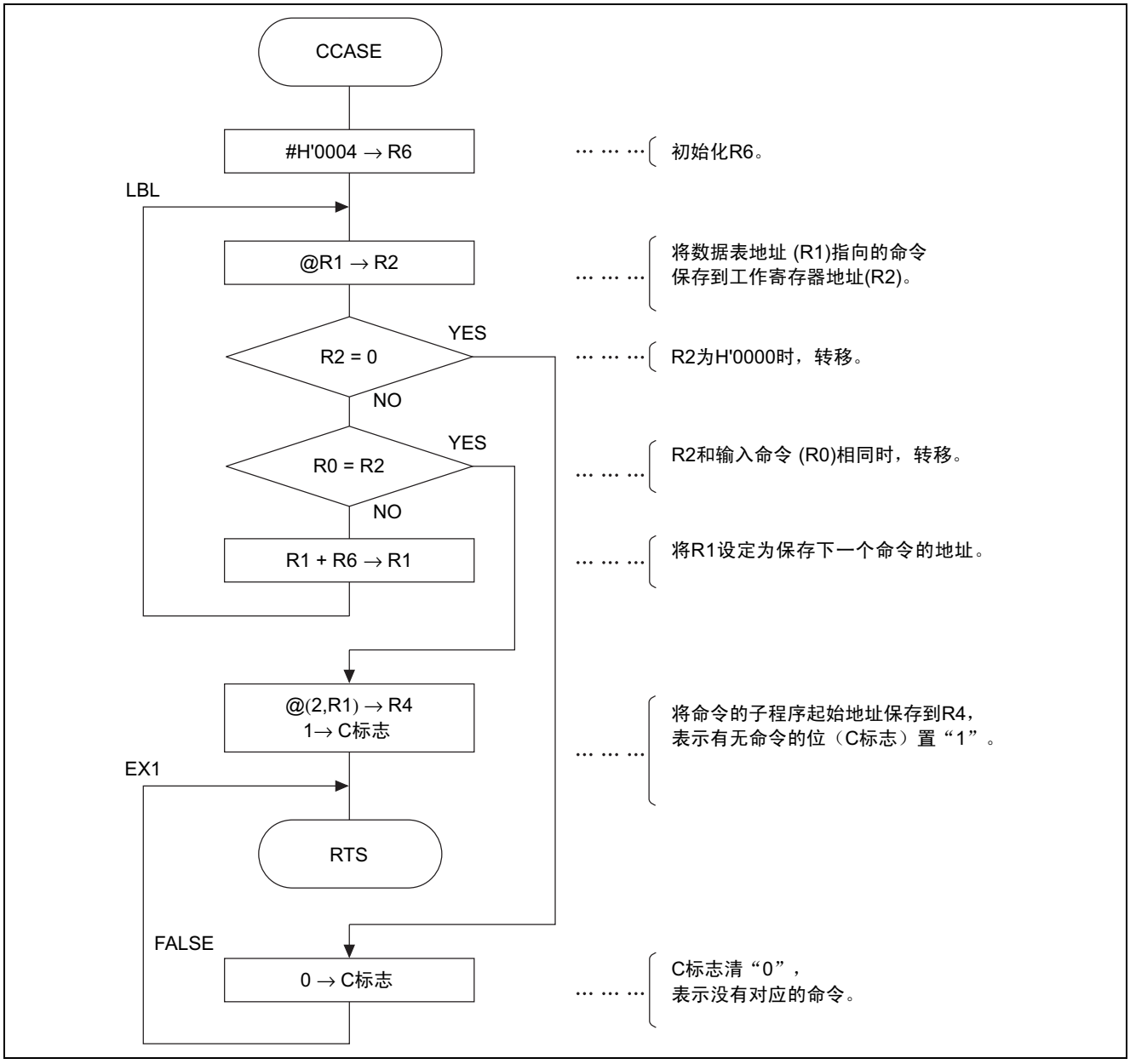
【注】* 向处理程序转移的程序例
软件 CCASE 只能把处理程序的起始地址置到 R4。
实际上在向处理程序转移时，必须设计如下程序。

```
         :
         JSR      @CCASE               …… 子程序调用CCASE。
         Bcc      ERROR                …… C标志为“0”时向错误程序转移。
处理程序转移
         JSR      @R4                  …… 子程序调用处理程序。
ERROR    错误程序
         :
```

5.5 工作原理

(1) R1 用作表示数据表地址的指针。
(2) 用寄存器间接寻址，从数据表的起始地址依次读取命令，比较被输入的命令内容（R0）。
(3) 在 R0 和数据表一致的情况下，将分配在命令的下一个地址中的处理程序的起始地址设定到 R4，并在将 C 标志置“1”后结束软件 CCASE。
(4) 数据表的命令为 H’0000 时，将 C 标志清“0”后，结束软件 CCASE。

6. 流程图



7. 程序清单

```
*** H8/300 ASSEMBLER    VER 1.0B **    08/18/92 09:47:08
PROGRAM NAME =
1                           ;*********************************************************************
2                           ;*
3                           ;*   00 – NAME            :TABLE BRANCH (CCASE)
4                           ;*
5                           ;*********************************************************************
6                           ;*
7                           ;*   ENTRY       :R0            COMMAND
8                           ;*                R1            DATA TABLE START ADDRESS
9                           ;*
10                          ;*   RETURN      :R4            MODULE START ADDRESS
11                          ;*                C bit of CCR    C=1;TRUE , C=0;FALSE
12                          ;*
13                          ;*********************************************************************
14                          ;
15 CCASE_co C 0000               .SECTION     CCASE_code,CODE,ALIGN=2
16                               .EXPORT      CCASE
17                          ;
18 CCASE_co C       00000000  CCASE       .EQU   $             ;Entry point
19 CCASE_co C 0000 79060004       MOV.W  #H'0004,R6
20 CCASE_co C 0004           LBL
21 CCASE_co C 0004 6912           MOV.W  @R1,R2
22 CCASE_co C 0006 4710           BEQ    FALSE               ;If table "END" then exit
23 CCASE_co C 0008 1D02           CMP.W  R0,R2
24 CCASE_co C 000A 4704           BEQ    TRUE                ;Branch if command find
25 CCASE_co C 000C 0961           ADD.W  R6,R1               ;Increment table address
26 CCASE_co C 000E 40F4           BRA    LBL                 ;Branch always
27 CCASE_co C 0010           TRUE
28 CCASE_co C 0010 6F140002       MOV.W  @(H'2,R1),R4        ;Load module start address
29 CCASE_co C 0014 0401           ORC    #H'01,CCR           ;Set C flag for true
30 CCASE_co C 0016           EX1
31 CCASE_co C 0016 5470           RTS
32 CCASE_co C 0018           FALSE
33 CCASE_co C 0018 06FE           ANDC   #H'FE,CCR           ;Clear C flag for false
34 CCASE_co C 001A 40FA           BRA    EX1
35                          ;
36                                .END
*****TOTAL ERRORS       0
*****TOTAL WARNINGS     0
```

修订记录

Rev.	发行日	修订内容	
		页	修订要点
1.00	2005.07.29	—	初版发行

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