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MSC TECHNICAL NEWS

No.M32R-01-9712

M32000D3FP, M32000D4AFP USAGE NOTES for standby mode operation

Note on using standby mode of the low power consumption mode is described below.

1. RELEVANT DEVICES

M32000D3FP
M32000D4AFP

2. PROBLEM

An instruction placed after the instruction switching to standby mode (store instruction to MPMR register) is executed immediately after returning* from standby mode.

* After this, the instruction fetch operation to the reset vector is executed in master mode, or the instruction fetch operation to the interrupt vector by the wakeup request interrupt input in slave mode is executed.

This problem occurs specifically on instructions that modify memory or I/O (store instruction etc.).

3. SOLUTION

The branch instruction which branch to the address itself (infinity loop) should be written immediately after the instruction switching to standby mode (store instruction to MPMR register).

(1) Assembler example

```
.....
    LDI    R1,#3
    LDI    R0,#-5
    STB    R1,@R0 ; Setting MPMR (switching standby mode)
L3:
    BRA    L3 ; Infinity loop to address itself
```

(2) C language example

```
void main(void)
{
    unsigned char *MPMR = (unsigned char *)0xffffffffb ;
    *MPMR = 3 ; /* Setting MPMR (switching standby mode) */
    while (1); /* Infinity loop to address itself */
}
```