

7544 Group

Timer A Operation (Timer Mode)

1. Abstract

The following article introduces and shows an application example of timer mode of timer A.

2. Introduction

The explanation of this issue is applied to the following condition:

Applicable MCU: 7544 Group

3. Contents

Outline: The input clock is divided by the timer so that the period processing is executed every 25 ms intervals.

- Specifications:**
- The $f(X_{IN}) = 8 \text{ MHz}$ is divided by timer A to detect 25 ms.
 - The timer A interrupt request is confirmed in the main routine. When 25 ms has elapsed, the period processing is executed in the timer A interrupt processing routine.
 - Operation clock: $f(X_{IN}) = 8 \text{ MHz}$, high-speed mode

3.1 Example of Control Procedure

Figure 1 shows an example of control procedure.

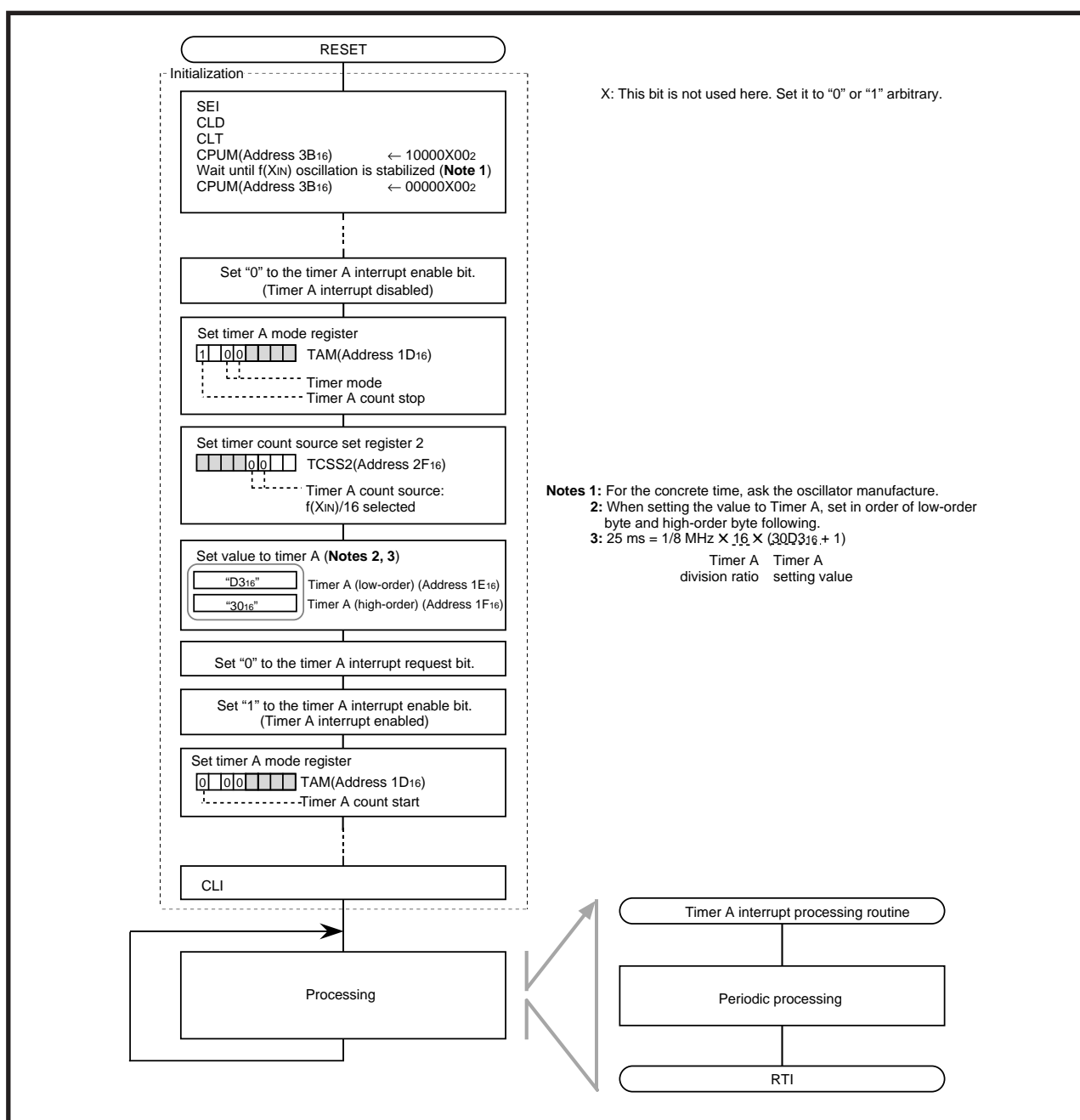


Figure 1 Example of control procedure

4. Sample Programming Code

[Reset Start •• Main Routine Process]

```

RESET:
    SEI                      ; Interrupt disable
    CLD
    CLT
;
    LDX #$FF                ; Set stack bottom
    TXS
;
    LDM #%10000000,CPUM     ; Set CPU mode register
;
; Wait f(XIN) oscillation stabilizing time
;
    LDM #%00000000,CPUM     ; Set CPU mode register
;
    LDA #0
    LDX #>RAM_top
RAM_clear:
    STA $00,X
    INX
    BNE RAM_clear
;
    CLB 2,ICON2             ; TimerA interrupt disable
;
    LDM #%10000000,TAM      ; Set Timer A mode register
    LDM #%00000000,TCSS2    ; select timer A count source : f(Xin)/16
    LDM #$D3,TAL            ; Set Timer A (low-order)
    LDM #$30,TAH            ; Set Timer A (high-order)
;
    CLB 2,IREQ2             ; TimerA interrupt request clear
    SEB 2,ICON2             ; TimerA interrupt disable
;
    CLB 7,TAM               ; Timer A start
;
    CLI                     ; Interrupt enable
;
__MAIN:
    BRA __MAIN
;

```

[Timer A Interrupt Process]

```

__int_TimerA:
    CLD
    CLT
;
__INT_tA_E:
    RTI
;

```

5. Reference

Data Sheet

- 7544 Group Data sheet
- 7544 Group Data sheet (QzROM Version)

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REVISION HISTORY	7544 Group Timer A Operation (Timer Mode)
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Rev.	Date	Description	
		Page	Summary
1.00	Apr 01, 2003	-	First Edition issued
2.00	Nov 12, 2004	3	Sample Programming Code added.

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