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April 1st, 2010
Renesas Electronics Corporation

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38D2 Group

Timer 1 Operation (Timer Mode: One Second Timer)

1. Abstract

The following article introduces and shows an example of Timer 1 Operation (Timer Mode: One Second Timer) on the 38D2 Group device.

2. Introduction

The application explained in this document applies to the following MCU and parameter(s):

Applicable MCU: 38D2 Group

Oscillation frequency of main clock ($f(XIN)$): 8MHz

Oscillation frequency of sub clock ($f(XCIN)$): 32.768 kHz

This sample program may include operations of unused bit functions for the convenience of the SFR bit layout. Set the values according to the operational conditions of the user system.

3. Contents

3.1 One Second Generation

Outline: The clock is divided by the timer so that the clock can count up at one-second intervals.

Specifications:

- Select $f(XCIN)/2$ mode as system clock.
- Sub clock $f(XCIN) = 32.768$ kHz is divided by timer 1.
- Set 1/128 second flag in timer 1 interrupt routine which occurs at every 7.8125 ms interval.
- The main routine examines the /128 second flag, counts number of interrupts and generates one second. If one second has passed, the main routine counts up the clock.

Figure 3.1 shows the Connection Diagram and Division Ratios of Timer, Figure 3.2 shows the Relevant Register Settings, and Figure 3.3 shows the Control Procedure.

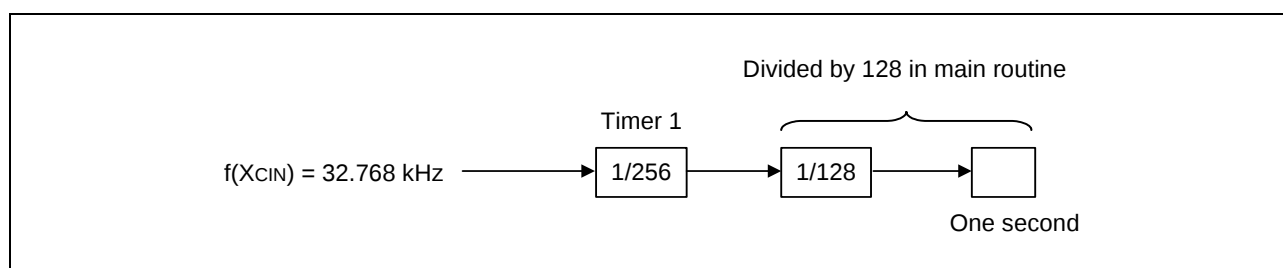


Figure 3.1 Connection Diagram and Division Ratios of Timer

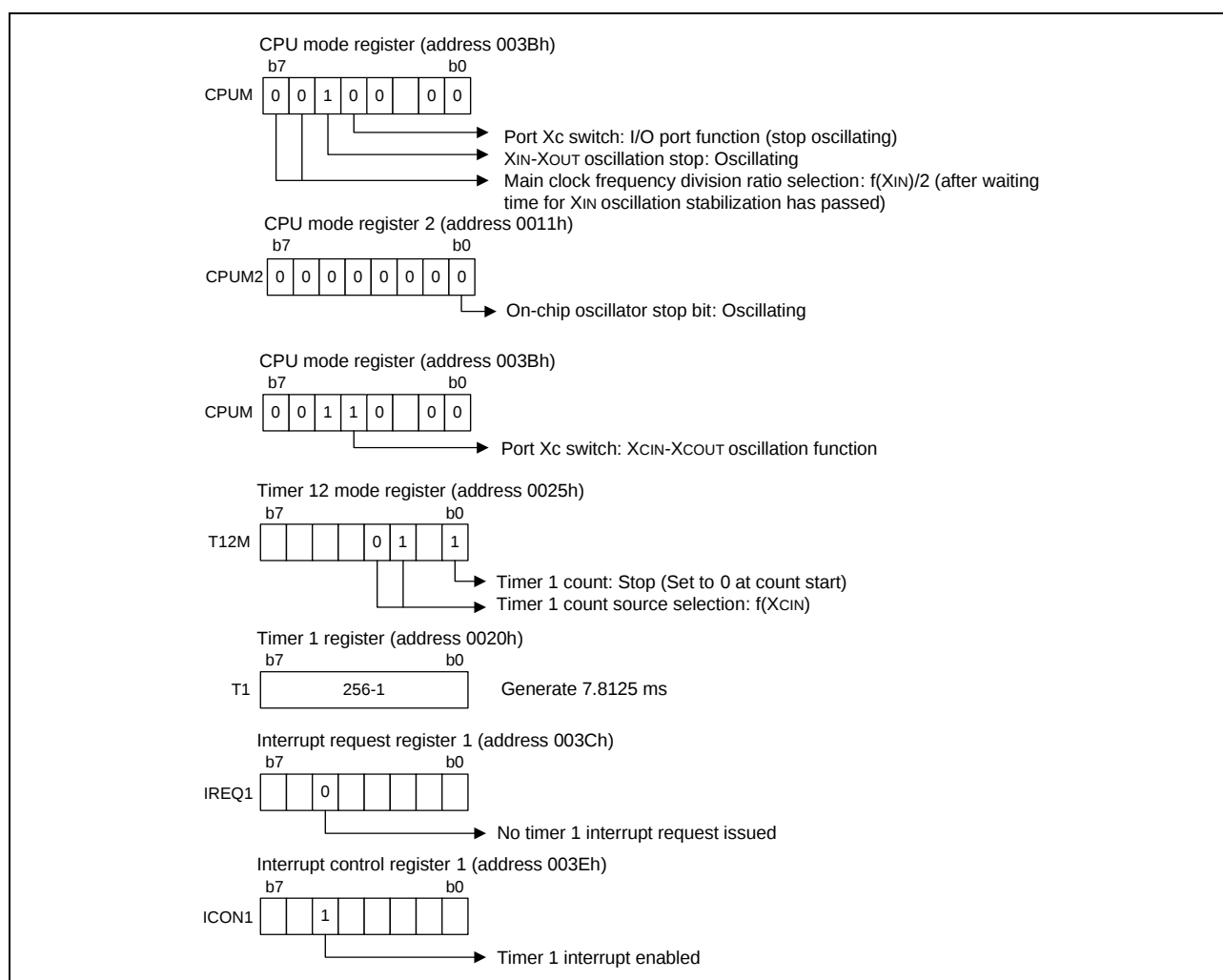


Figure 3.2 Relevant Register Settings

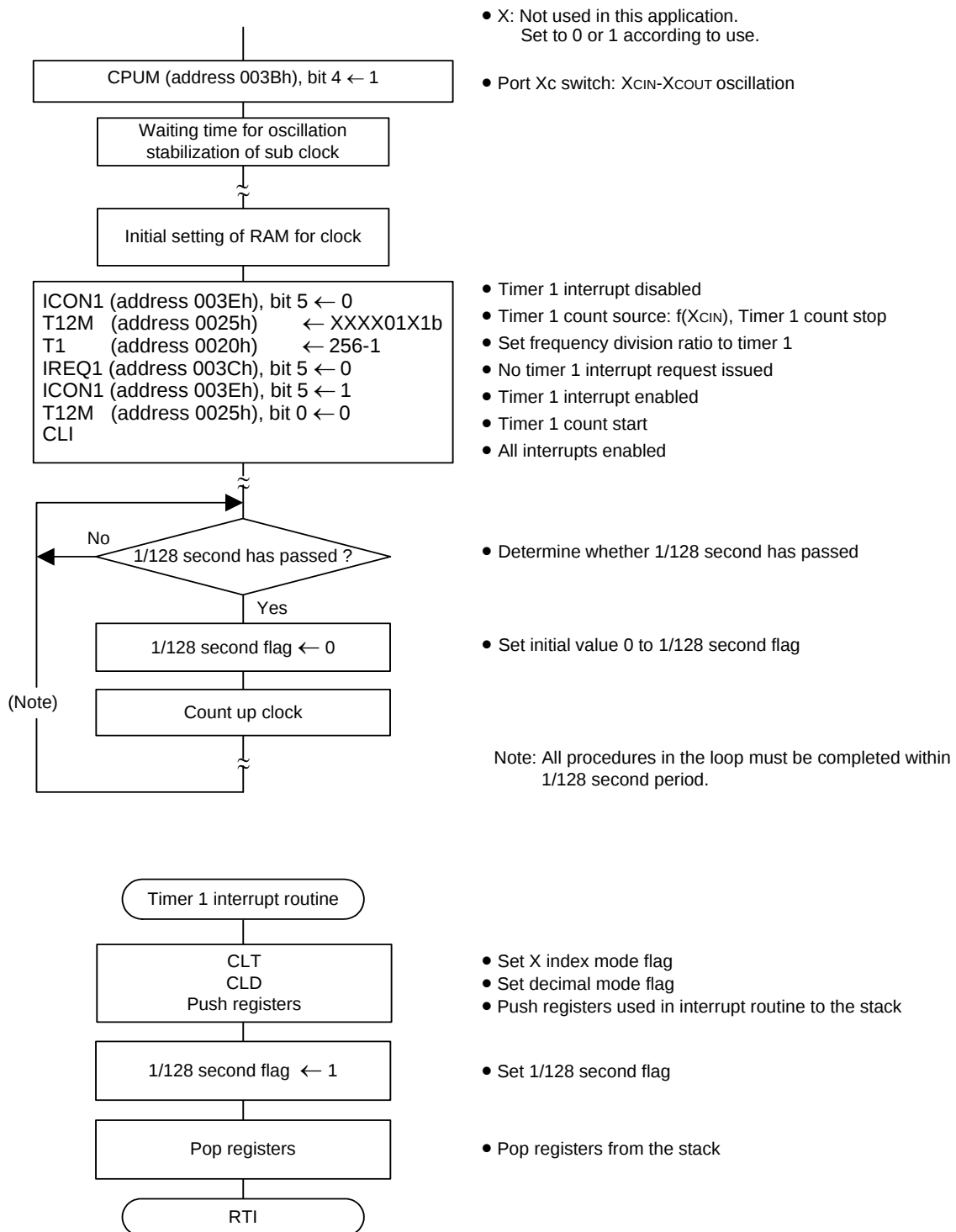


Figure 3.3 Control Procedure

4. Sample Programming Code

Download a sample program from the Renesas Technology website.
To download, click "Application Notes" in the left side menu on the page of the 38D2 Group.

5. Reference Document

Datasheet
38D2 Group Datasheet
Download the latest version from the Renesas Technology website.

Technical News/Technical Update
Download the latest information from the Renesas Technology website.

Website and Support

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REVISION HISTORY	38D2 Group Timer 1 Operation (Timer Mode: One Second Timer)
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Rev.	Date	Description	
		Page	Summary
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