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April 1st, 2010
Renesas Electronics Corporation

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38D2 Group

Watchdog Timer

1. Abstract

The following article introduces and shows an example of how to use the Watchdog 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 the main clock ($f(XIN)$): 4 MHz

Oscillation frequency of the on-chip oscillator ($f(OCO)$): 5MHz

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 Watchdog Timer

Outline: If program goes out of control, the MCU returns to the reset status by the watchdog timer for internal program malfunction detection.

Specifications:

- Frequency/2 mode is used for system clock ϕ .
- Select the on-chip oscillator/4/1024 as the count source of the watchdog timer.
- Before the watchdog timer underflows, writing to the watchdog timer control register is performed at every cycle in the main routine.
- Stop mode is not used.

Figure 3.1 shows a Watchdog Timer Connection and Division Ratio Setting, Figure 3.2 shows the Relevant Register Settings, and Figure 3.3 shows the Control Procedure.

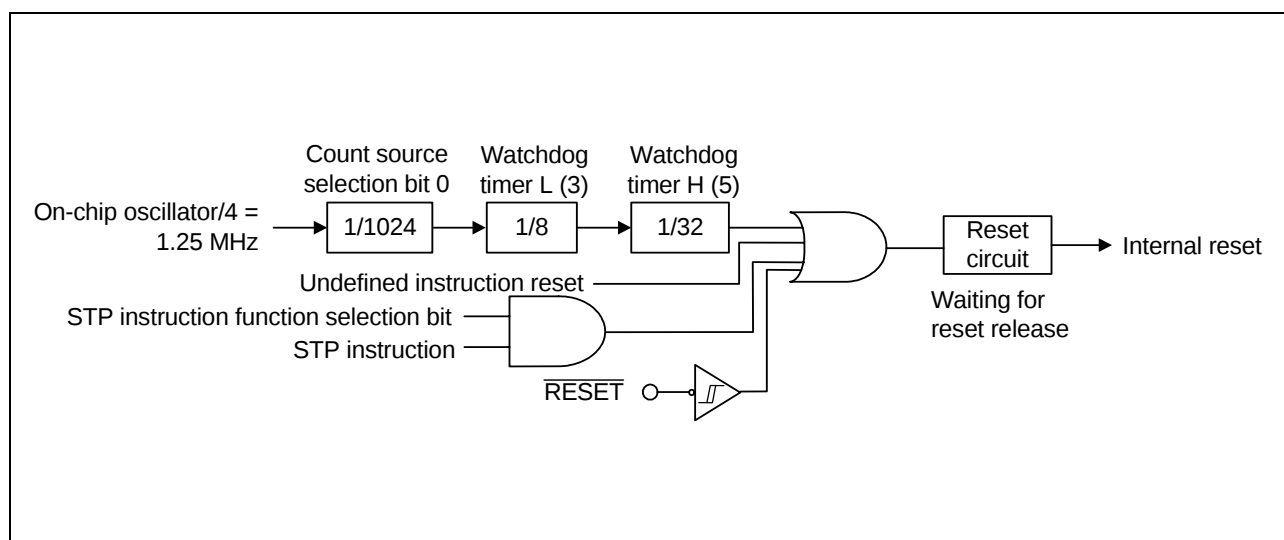


Figure 3.1 Watchdog Timer Connection and Division Ratio Setting

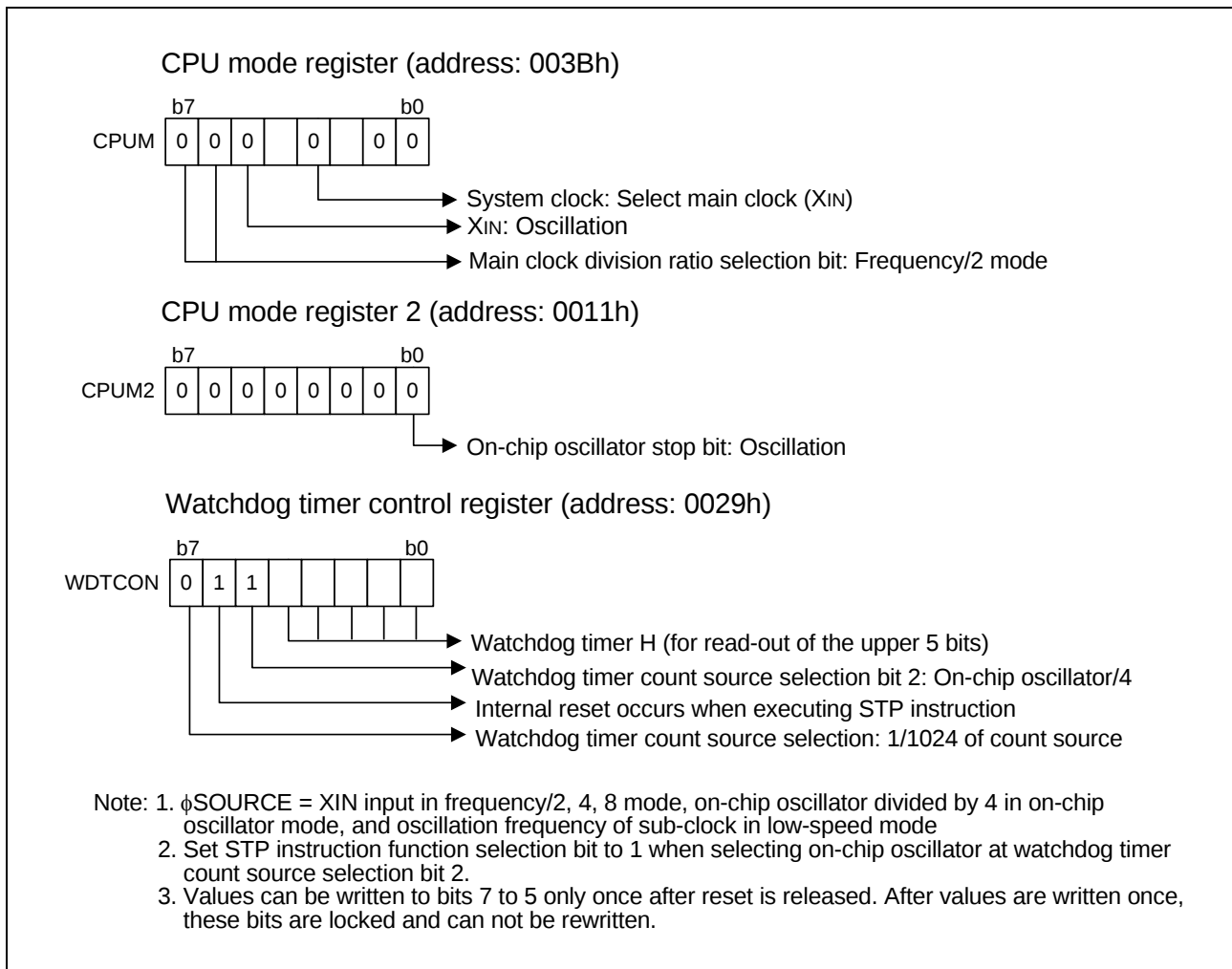


Figure 3.2 Relevant Register Settings

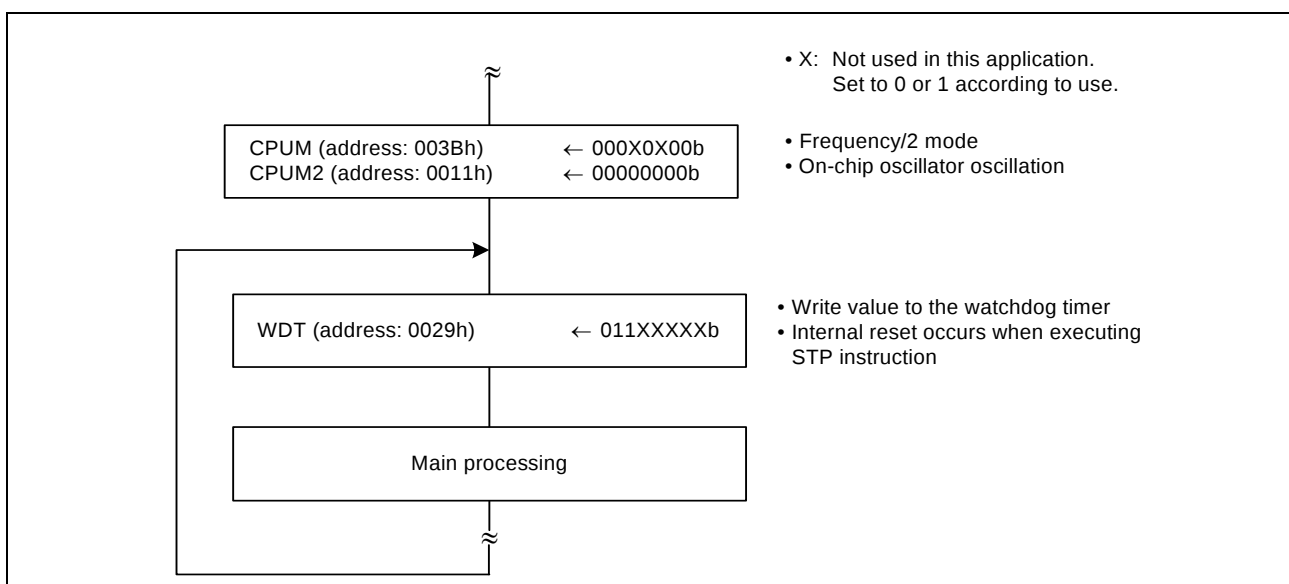


Figure 3.3 Control Procedure

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 Watchdog Timer
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Rev.	Date	Description	
		Page	Summary
1.00	Feb 9, 2007	–	First Edition issued

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