

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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## 3823 Group

### Watchdog Timer

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#### 1. Abstract

The following article introduces and shows an example of how to use the Watchdog Timer on the 3823 group device.

#### 2. Introduction

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

Applicable MCU: 3823 Group

Oscillation frequency: 4 MHz

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 runaway occurs, the watchdog timer for internal program runaway detection resets the MCU.

Specifications:

- XIN is used as system clock  $\phi$ .
- 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 Setting, and Figure 3.3 shows the Control Procedure.

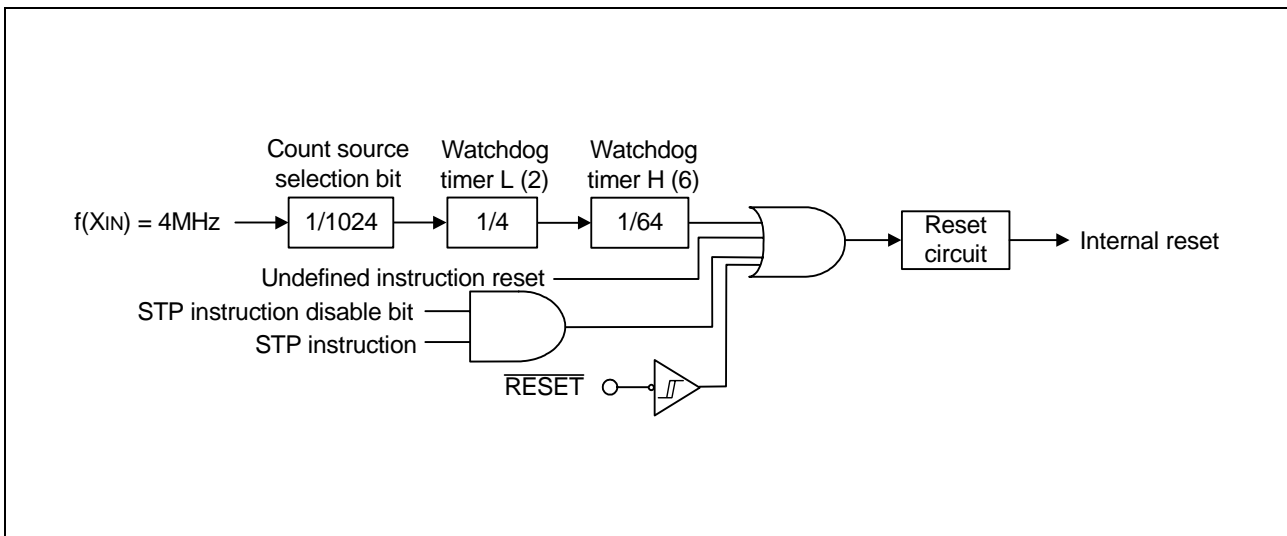


Figure 3.1 Watchdog Timer Connection and Division Ratio Setting

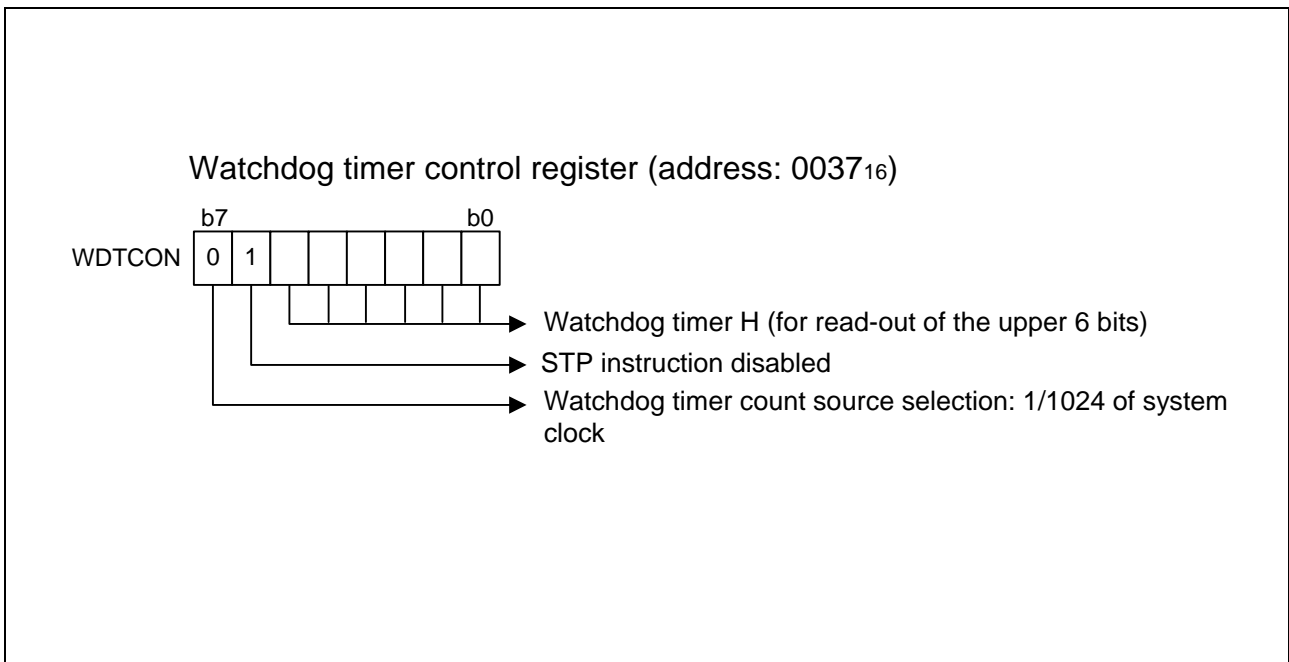


Figure 3.2 Relevant Register Setting

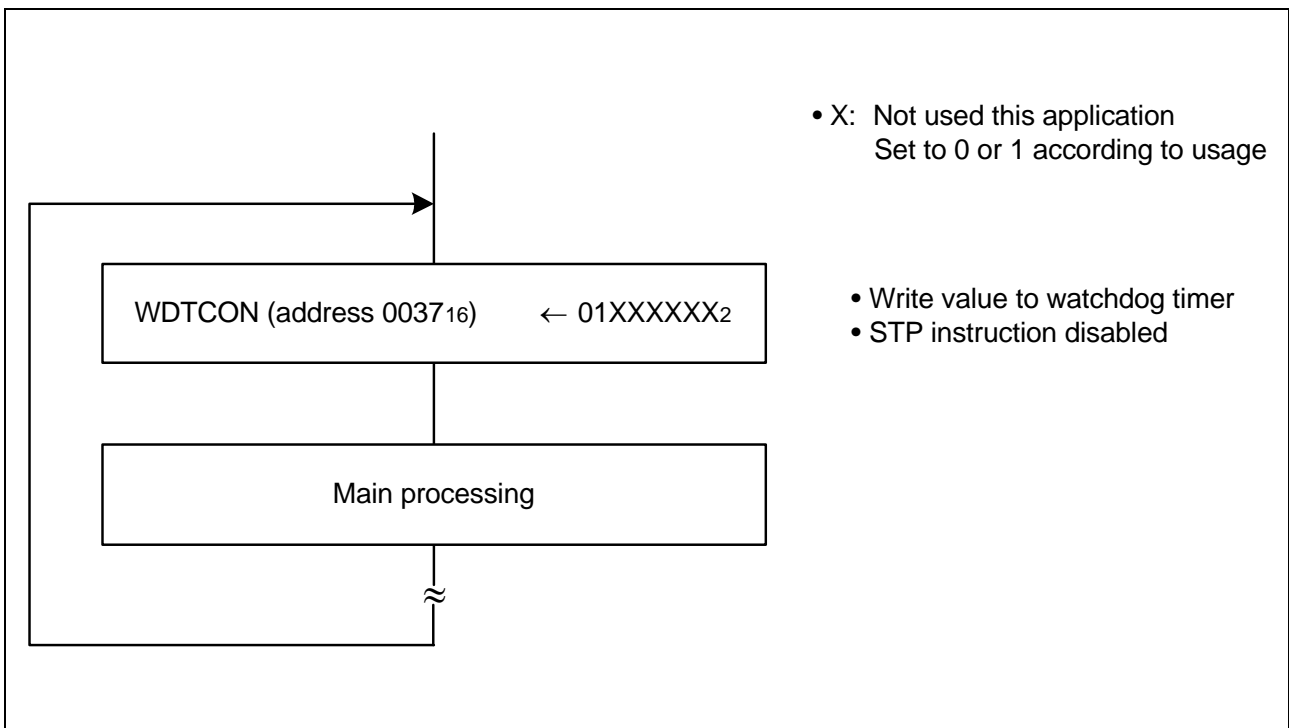


Figure 3.3 Control Procedure

#### **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 3823 Group.

#### **5. Reference Document**

Datasheet  
3823 Group Data sheet  
Download the latest version from the Renesas Technology website.

Technical News/Technical Update  
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REVISION HISTORY	3823 Group Watchdog Timer
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Rev.	Date	Description	
		Page	Summary
1.00	Aug 10, 2006	-	First Edition issued

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