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April 1st, 2010
Renesas Electronics Corporation

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7542 Group

Oscillation Stop Detection Function

1. Abstract

This document describes an application example of the oscillation stop detection function for the 7542 Group.

2. Introduction

The application example described in this document applies to the following MCU and parameters:

- MCU: 7542 Group
- Main clock: Ceramic resonator

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

3. Application Example

3.1 Application Example of Oscillation Stop Detection Function

Outline: This function triggers the oscillation stop detection reset when detecting main clock oscillation stops.

Specifications:

- Select the ceramic resonator as a main clock, and high-speed mode as internal clock ϕ .
- After reset, the main process starts after confirming that main clock is oscillating.
- The oscillation stop detection status bit is not initialized if an oscillation stop reset is triggered and this bit retains its value of 1. Confirm main clock oscillation after setting the oscillation stop detection status bit to 0. The oscillation stop detection status bit becomes 0 by writing 0 to the ceramic or RC oscillation stop detection function active bit.
- Confirm main clock oscillation by the oscillation stop detection status bit after disabling the oscillation stop reset.
- If main clock oscillates, the oscillation stop reset is enabled and the main process starts.
- If main clock does not oscillate, a countermeasure routine is performed.
- The watchdog timer is not used.

Figure 3.1 shows the settings of relevant registers. Figure 3.2 shows the control procedures.

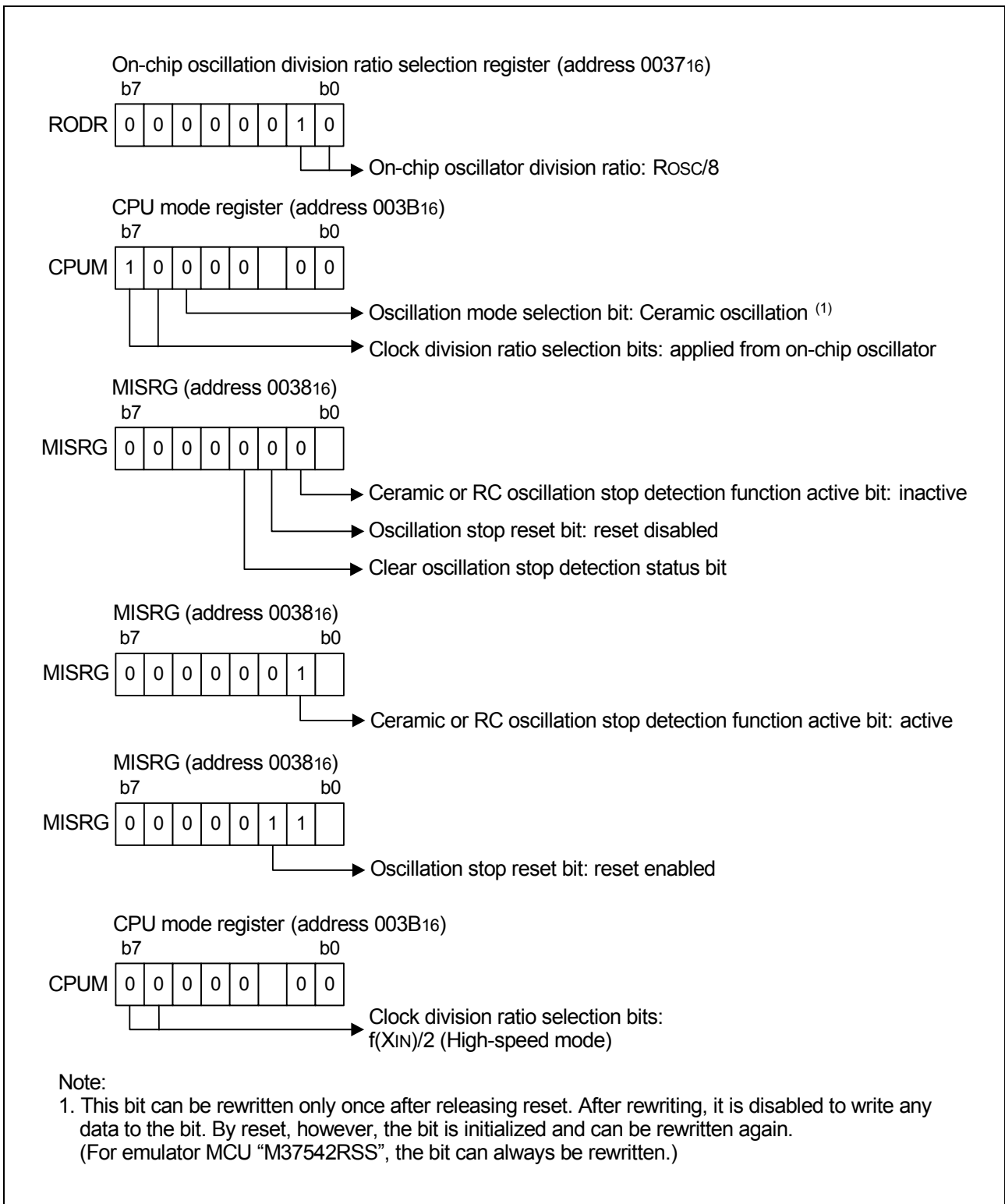


Figure 3.1 Relevant Register Settings (1)

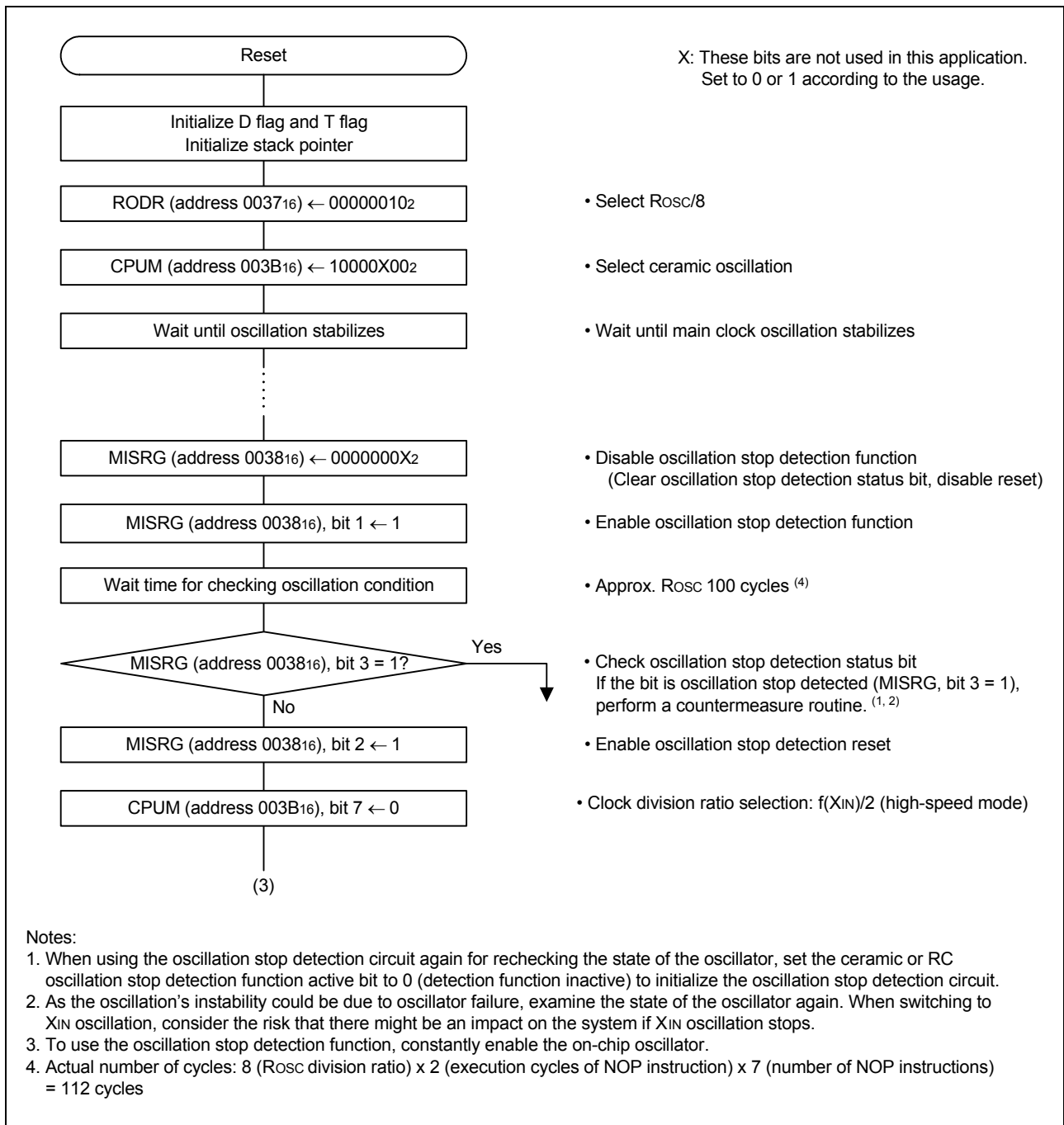


Figure 3.2 Control Procedures

4. Sample Programming Code

A sample program can be downloaded from the Renesas Technology Website.
To download, click “Application Notes” in the left-hand side menu of the 7542 Group.

5. Reference Documents

Datasheet

7542 Group Datasheet

The latest version can be downloaded from the Renesas Technology Website.

Technical News/Technical Update

The latest information can be downloaded from the Renesas Technology Website.

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