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April 1st, 2010
Renesas Electronics Corporation

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7548/7549 Group

Timer 2 Operation (Timer Mode: Piezoelectric Buzzer Output)

1. Abstract

The following article introduces and shows an example of how to use Timer 2 Operation (Timer Mode: Piezoelectric Buzzer Output) on the 7548/7549 Group device.

2. Introduction

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

Applicable MCU: 7548/7549 Group
Oscillation frequency: 8 MHz

Function set ROM data 0 to 2 are areas used to set peripheral functions by data written to the QzROM and can not be set by program. Data set to these areas are valid after a reset of the MCU is released. Make sure to set values according to the user system regardless of the use of peripheral functions. Set values used in this sample program are as follows.

Function set ROM data 0 FSR0M0 (address FFD8h): 1000000b
Function set ROM data 1 FSR0M1 (address FFD9h): 1000001b
Function set ROM data 2 FSR0M2 (address FFDAh): 00001011b

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 Piezoelectric Buzzer Output

Outline: A piezoelectric buzzer is output using timer 2 timer mode.

Specifications:

- The square wave, which is the clock $f(X_{IN}) = 8\text{ MHz}$ divided by 2 kHz is output from the P13/T2OUT pin.
- Output level of the P13/T2OUT pin is fixed to “H” while a piezoelectric buzzer output is stopped.

Figure 3.1 shows the Output Waveform and Peripheral Circuit Example, Figure 3.2 shows the Connection Diagram and Division Ratios, Figure 3.3 shows the Relevant Register Settings, and Figure 3.4 shows the Control Procedure.

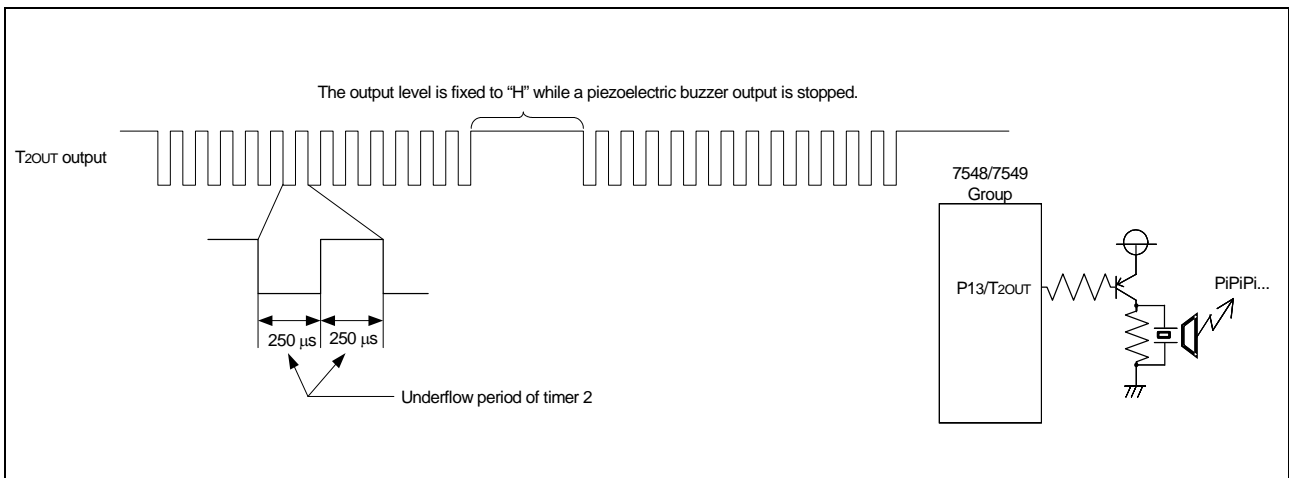


Figure 3.1 Output Waveform and Peripheral Circuit Example

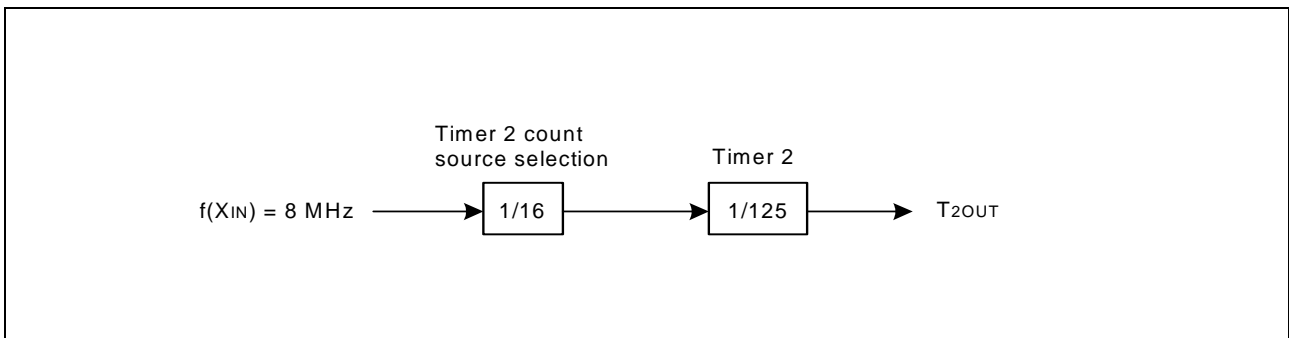


Figure 3.2 Connection Diagram and Division Ratios

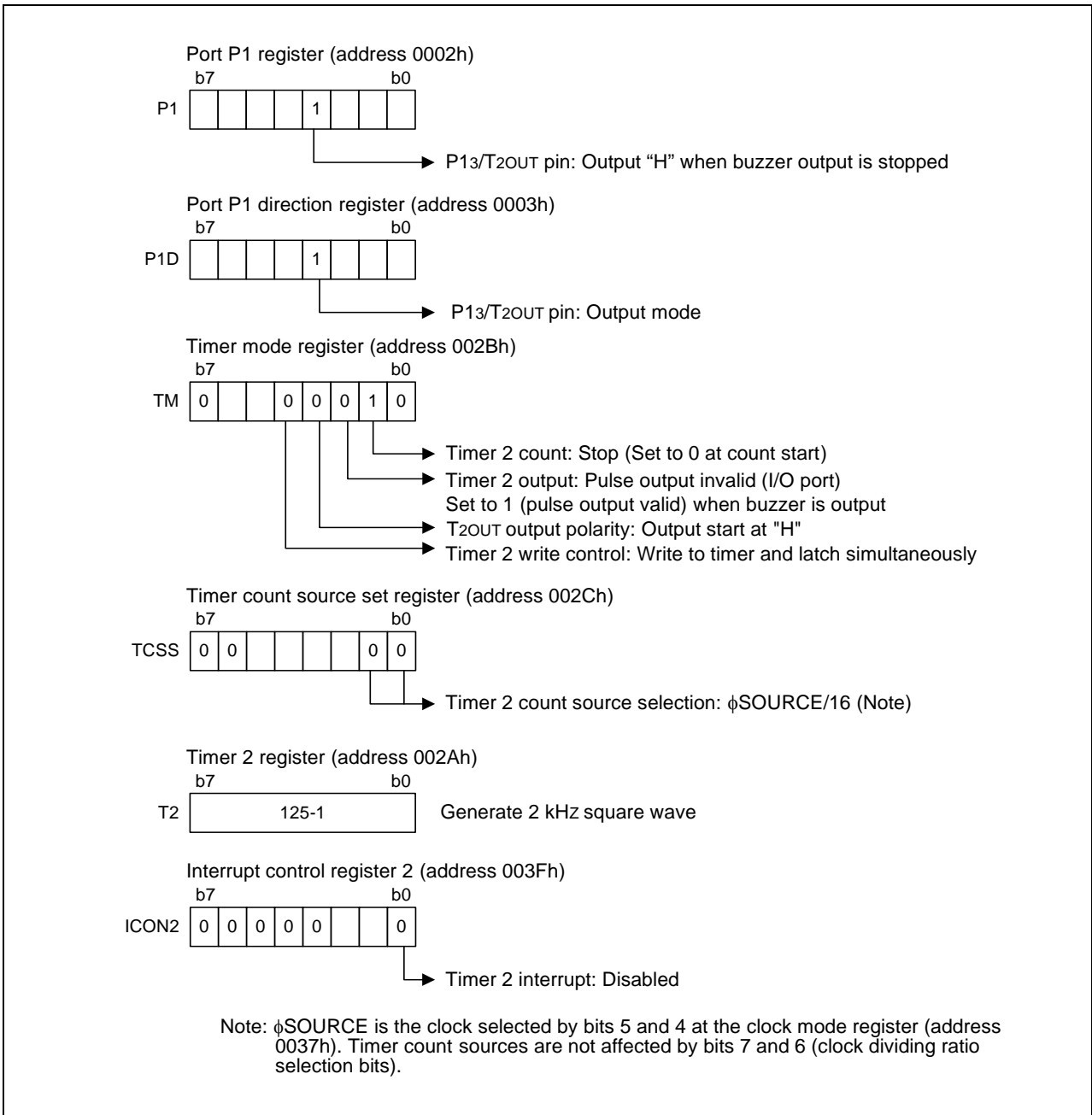


Figure 3.3 Relevant Register Settings

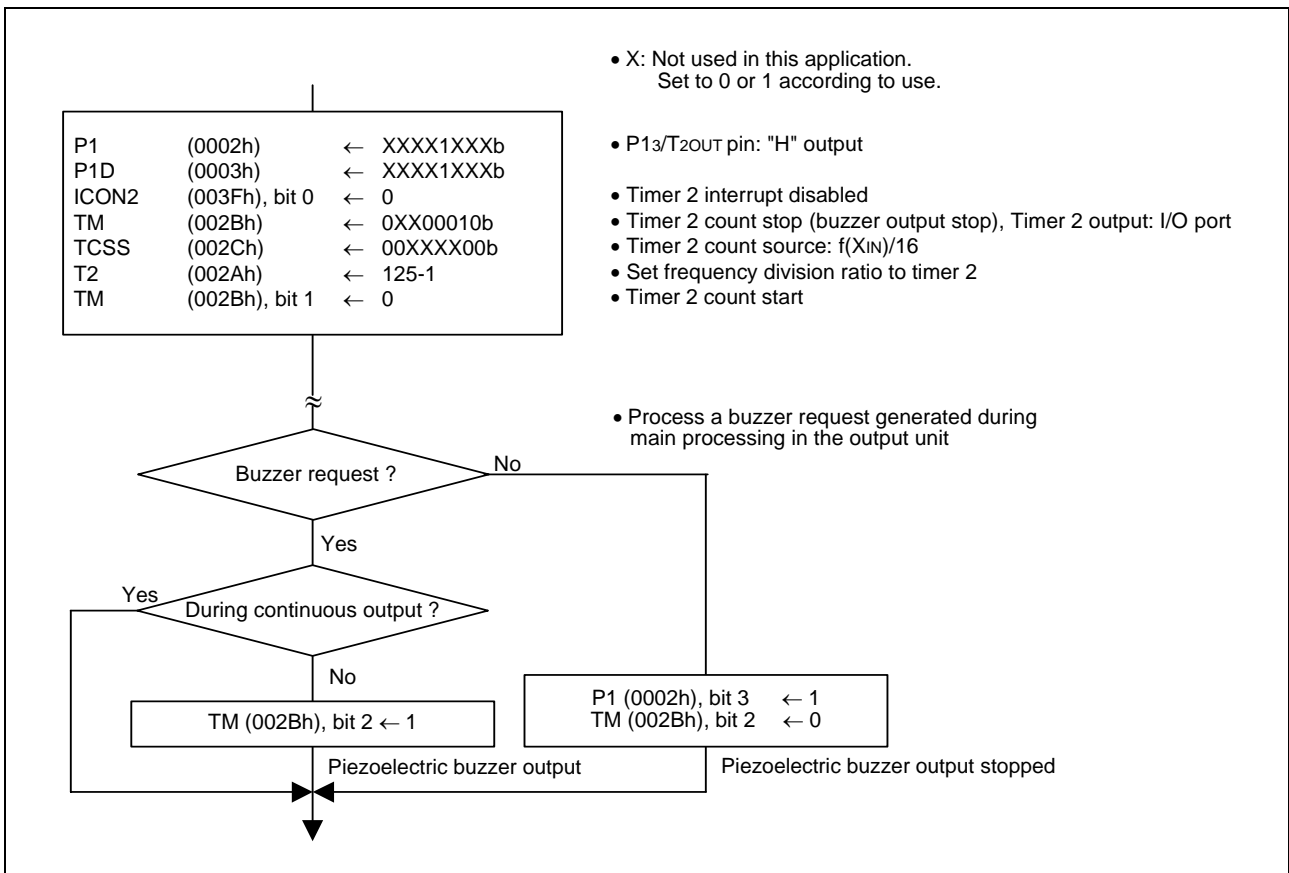


Figure 3.4 Control Procedure

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 7548/7549 Group.

5. Reference Document

Datasheet

7548/7549 Group Datasheet

Download the latest version from the Renesas Technology website.

Technical News/Technical Update

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REVISION HISTORY	7548/7549 Group Timer 2 Operation (Timer Mode: Piezoelectric Buzzer Output)
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		Page	Summary
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