

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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## 3858 Group

### Timer Z1 Operation (Pulse Output Mode: Piezoelectric Buzzer Output)

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#### 1. Abstract

This document describes how to set up and use timer Z1 (pulse output mode: piezoelectric buzzer output) on the 3858 Group device.

#### 2. Introduction

The application example described in this document is applied to the following:

MCU: 3858 Group

Oscillation frequency: 8 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 operating conditions of the user system.

3. Contents

3.1 Piezoelectric Buzzer Output

Outline: In output mode, a waveform for the piezoelectric buzzer is output using timer Z1.

Specifications:

- A square waveform, which clock  $f(XIN) = 8\text{ MHz}$  is divided to  $2\text{ kHz}$ , is output from the P22/CNTR2 pin.
- The output level of the P22/CNTR2 pin is fixed to “H” while piezoelectric buzzer output is stopped.

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

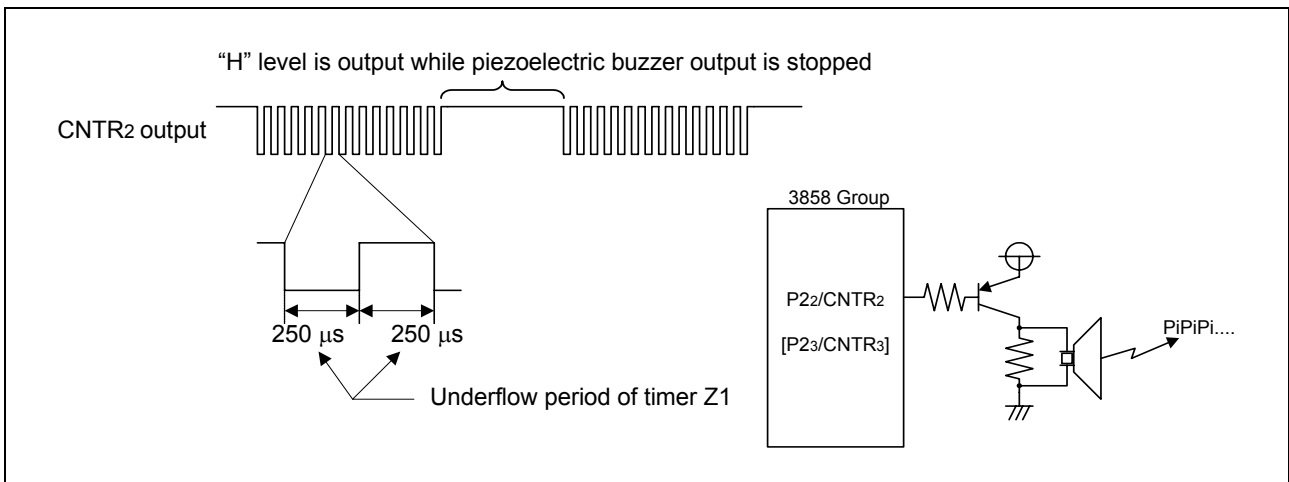


Figure 3.1 Output Waveform and Peripheral Circuit Example

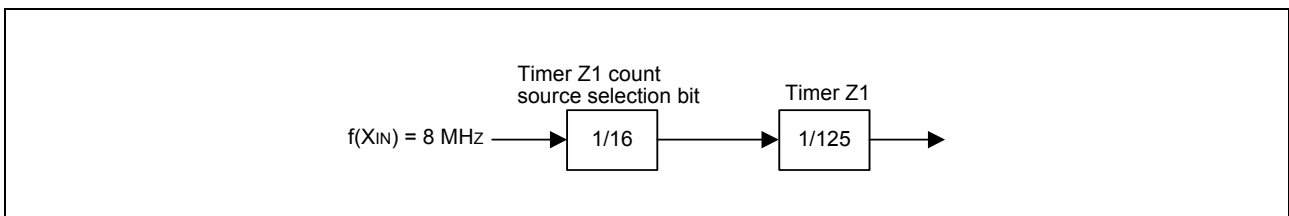


Figure 3.2 Timer Connection and Division Ratio Settings

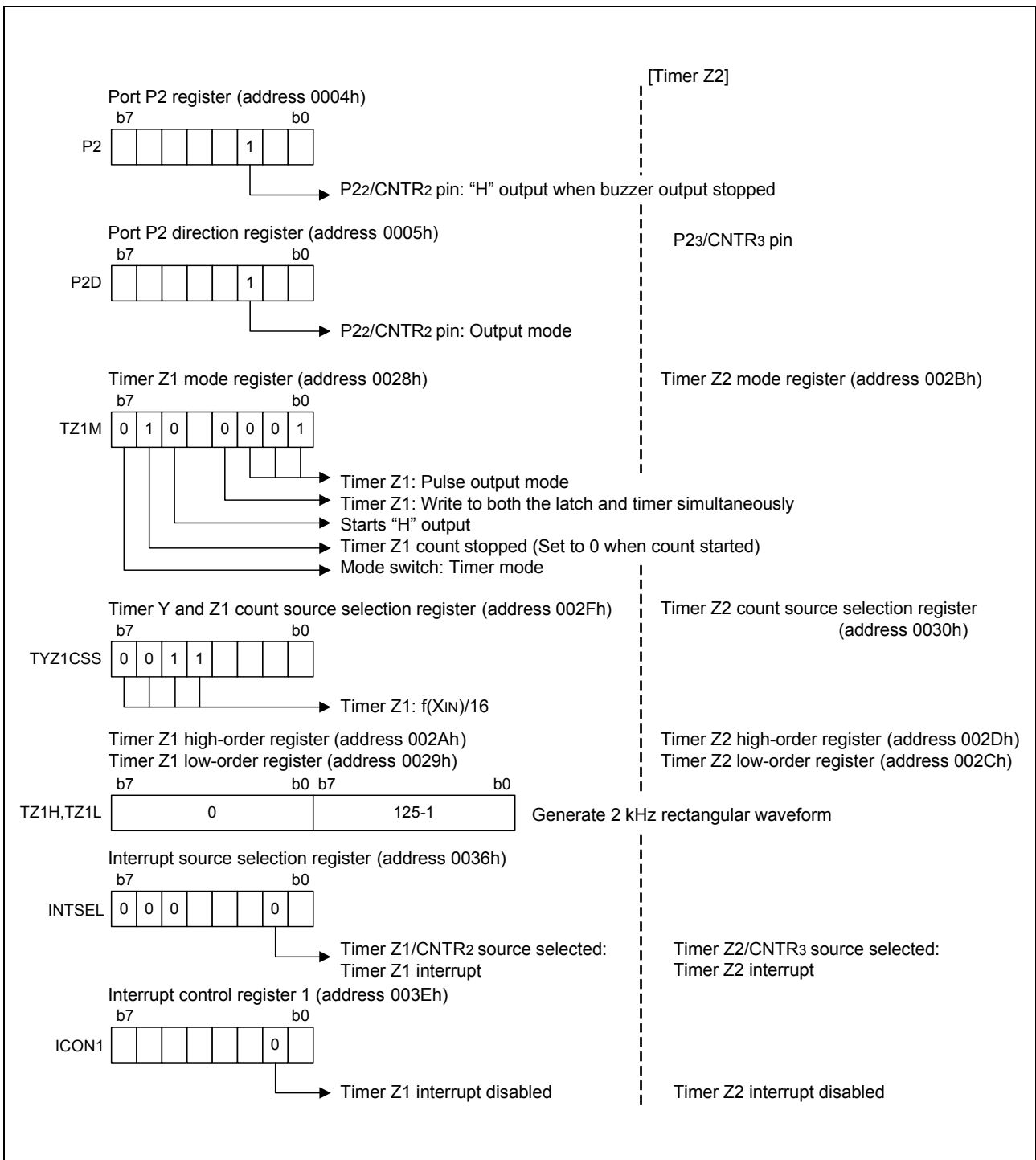


Figure 3.3 Relevant Register Settings

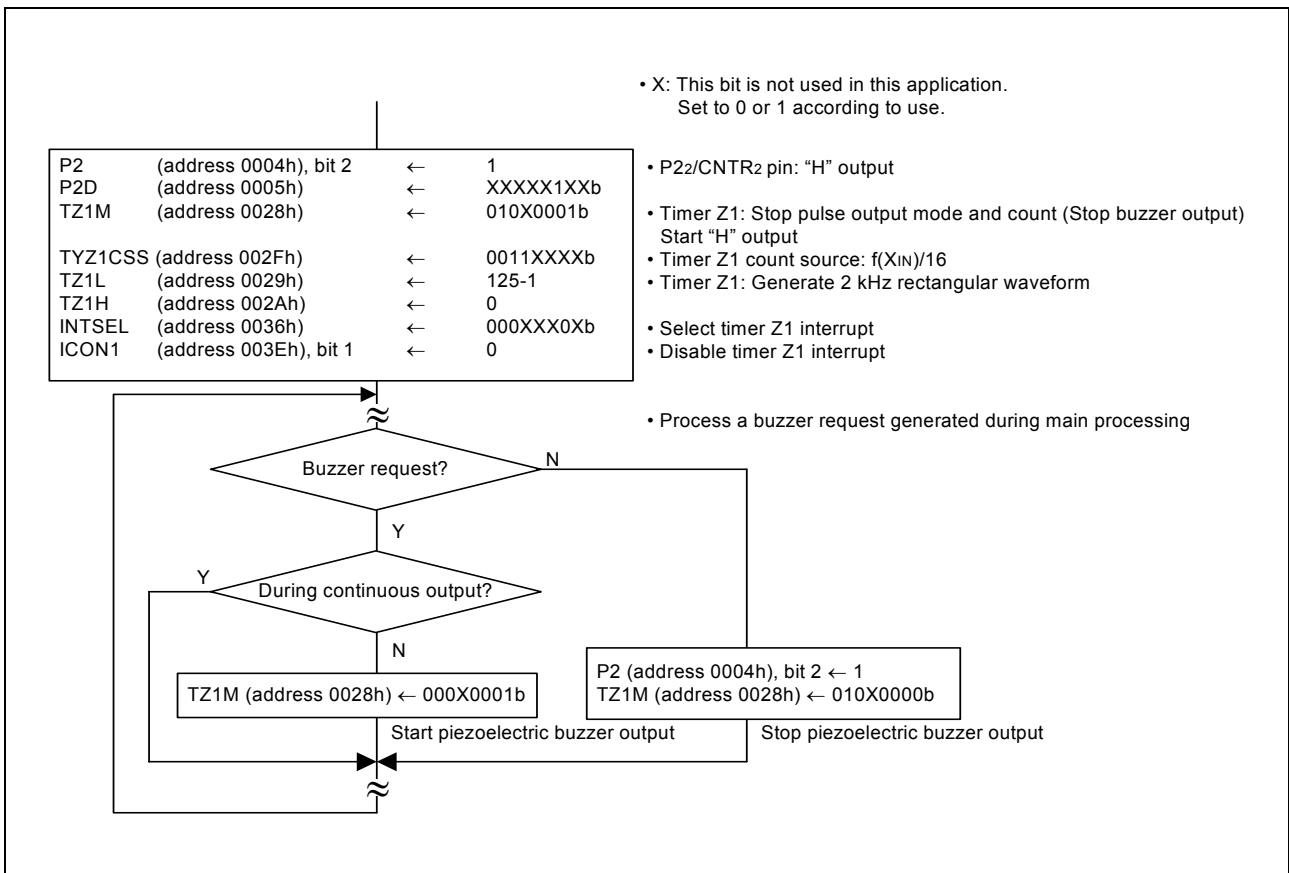


Figure 3.4 Control Procedure

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#### 4. Sample Programming Code

Download a sample program from the Renesas Technology website.

To download, click “Application Notes” in the left-hand side menu on the page of the 3858 Group.

#### 5. Reference Document

Datasheet

3858 Group Datasheet

Download the latest version from the Renesas Technology website.

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REVISION HISTORY	3858 Group Timer Z1 Operation (Pulse Output Mode: Piezoelectric Buzzer Output) Application Note
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Rev.	Date	Description	
		Page	Summary
1.00	Aug 10, 2006	-	First Edition issued



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