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April 1st, 2010
Renesas Electronics Corporation

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38D2 Group

Timer X Operation (PWM Mode: IGBT Control Signal Output)

1. Abstract

The following article introduces and shows an example of how to use the Timer X Operation (PWM Mode: IGBT Control Signal Output) 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: 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 user system operating parameters.

3. Contents

3.1 IGBT Control Signal Output

- Outline: • The fixed period PWM signal is output from the P35/TXOUT1 pin and the P37/TXOUT2 pin.
- Specifications:
- The signal of 5 μs “H” width and 20 μs period is output from the P35/TXOUT1 pin.
 - The signal of 5 μs “L” width, 5 μs “H” width, and 5 μs “L” width is output from the P37/TXOUT2 pin when “L” is output from the P35/TXOUT1 pin.

Figure 3.1 shows the Connection Diagram of Timer and Frequency Division Ratio, Figure 3.2 shows the PWM (TXOUT1/TXOUT2) Output Waveform, Figure 3.3 and 3.4 show the Relevant Register Settings, and Figure 3.5 shows the Control Procedure.

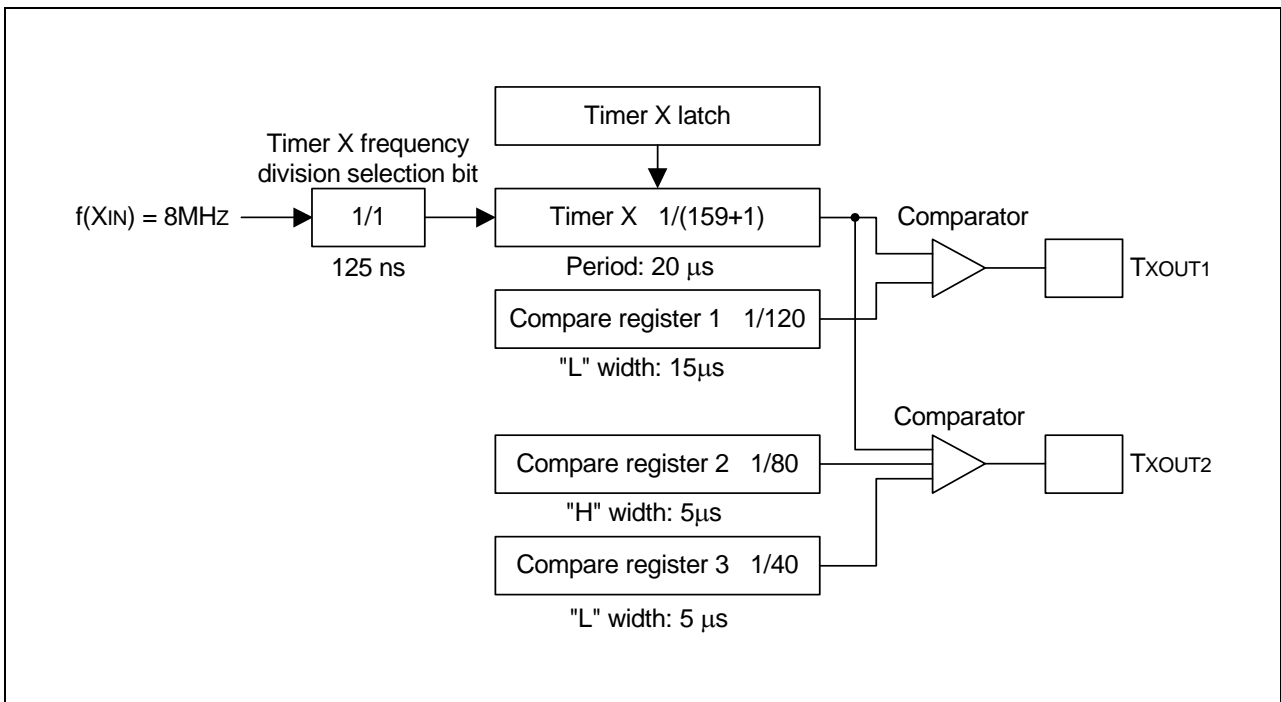


Figure 3.1 Connection Diagram of Timer and Frequency Division Ratio

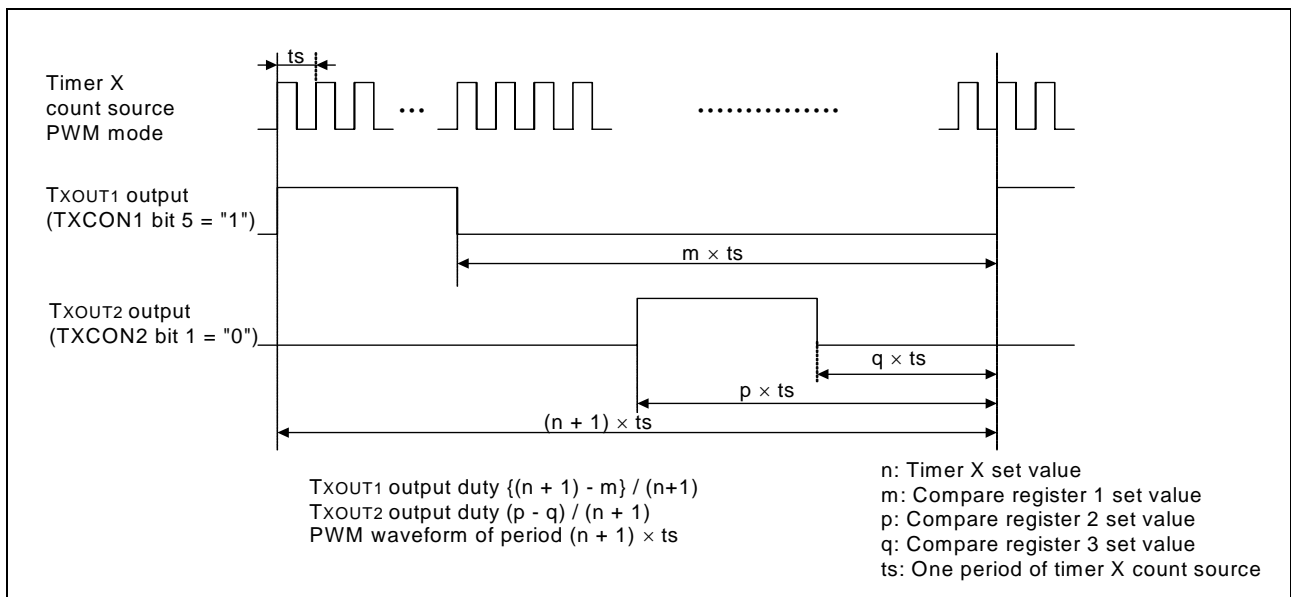


Figure 3.2 PWM (TXOUT1/TXOUT2) Output Waveform

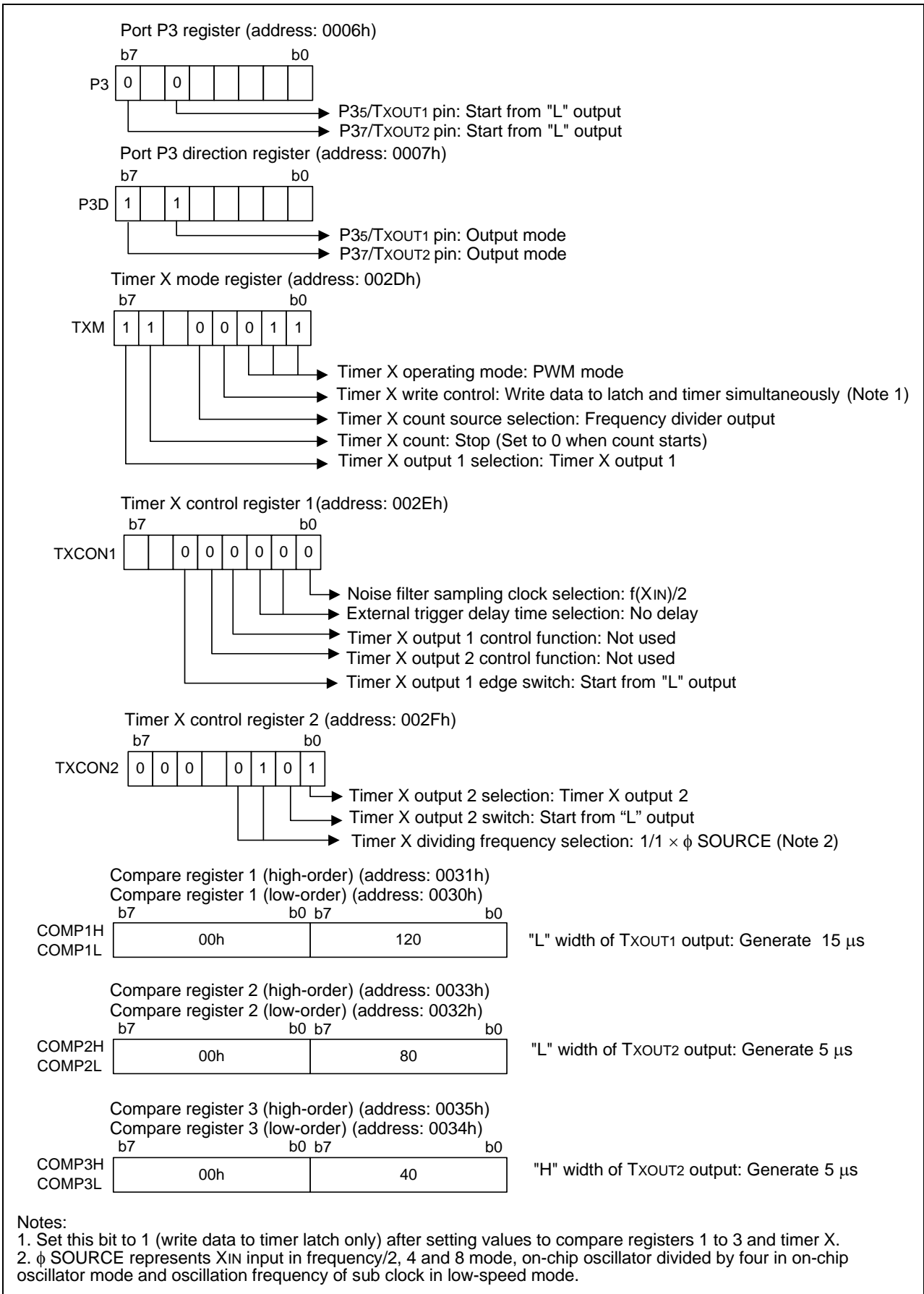


Figure 3.3 Relevant Register Settings (1)

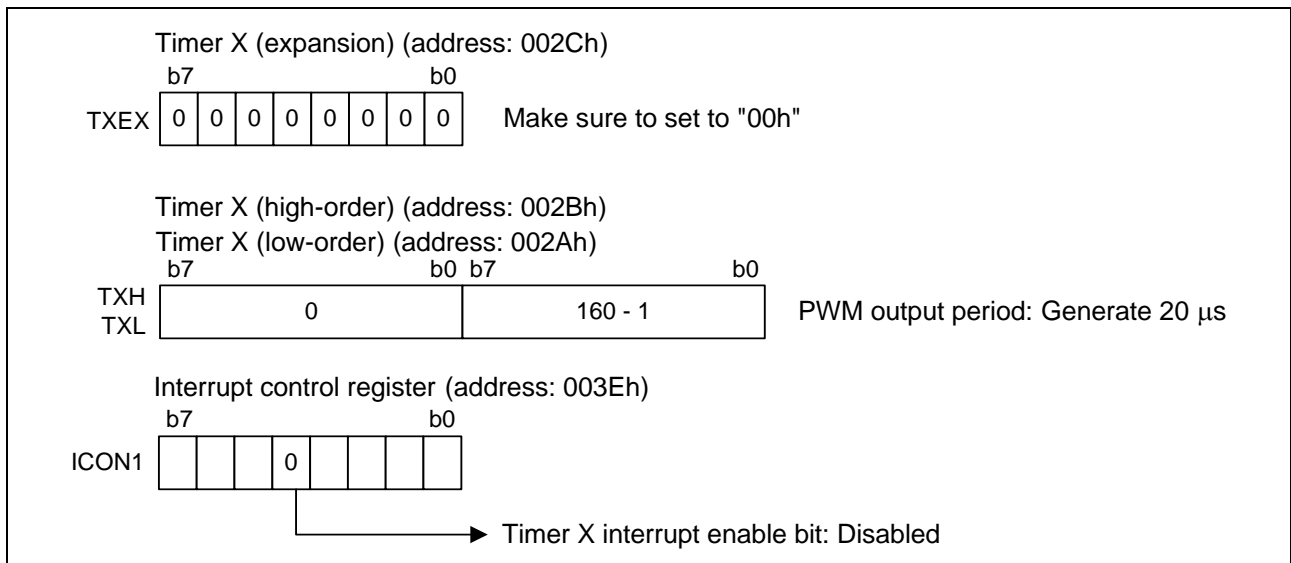


Figure 3.4 Relevant Register Settings (2)

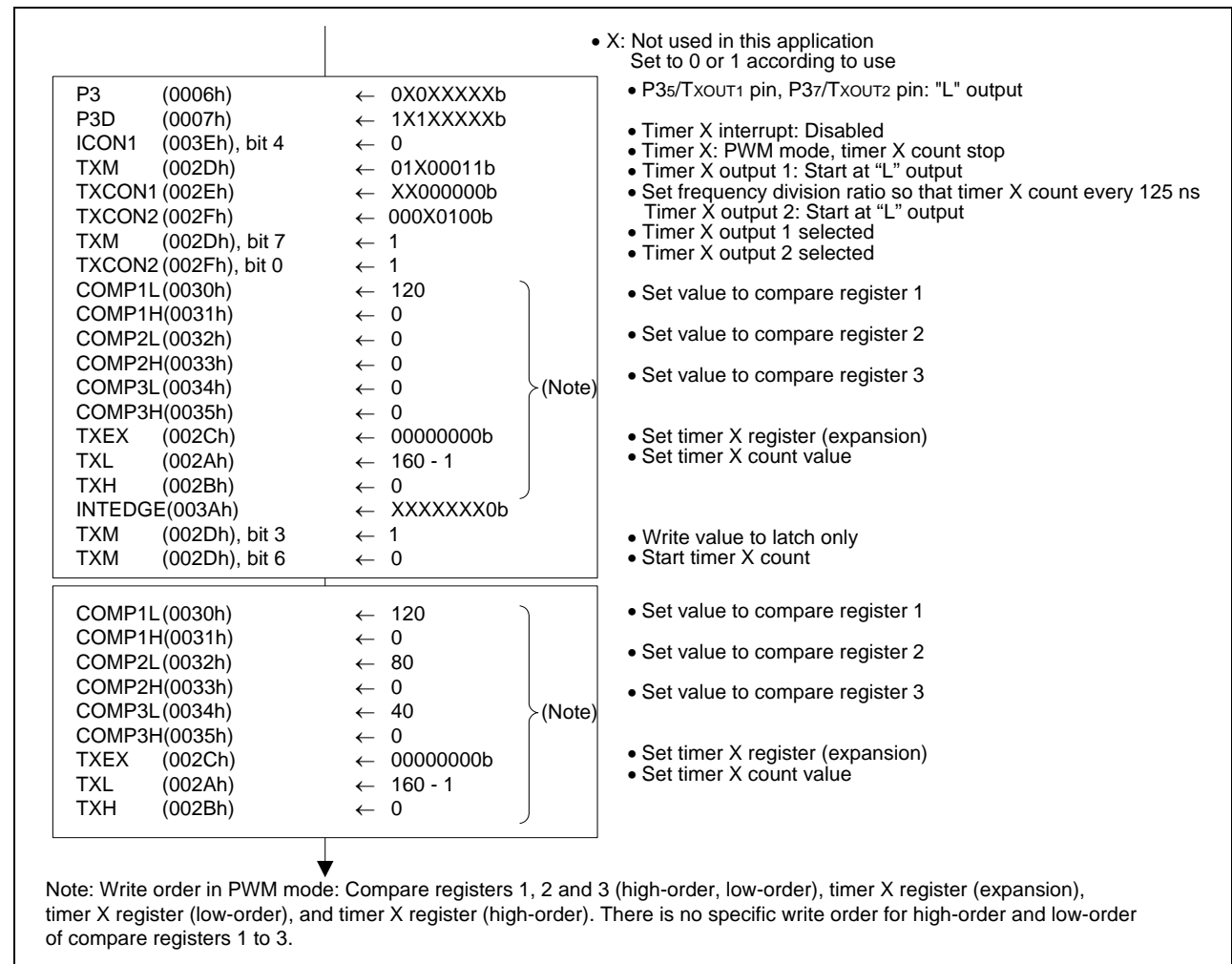


Figure 3.5 Control Procedure

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 Data sheet
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 Timer X Operation (PWM Mode: IGBT Control Signal Output)
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Rev.	Date	Description	
		Page	Summary
1.00	Feb 9, 2007	-	First Edition issued

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