

RENESAS TECHNICAL UPDATE

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Product Category	MPU & MCU	Document No.	TN-RX*-A064A/E	Rev.	1.00
Title	Note on Setting the PWM Carrier Cycle in Complementary PWM Mode 1 to Complementary PWM Mode 3 for MTU2, MTU2a, or MTU3	Information Category	Technical Notification		
Applicable Product	RX62G Group, RX62N Group, RX621 Group, RX62T Group, RX630 Group, RX63N Group, RX631 Group, RX63T Group, RX210 Group, RX220 Group, RX21A Group	Lot No.	Reference Document	User's Manuals: Hardware for applicable products (see the table at the bottom)	
	All				

This document describes a note on setting values of timer cycle data registers and timer dead time data registers in complementary PWM mode 1 to complementary PWM mode 3 for the multi-function timer pulse unit (MTU2, MTU2a, or MTU3) in the above applicable products.

Note

When outputting PWM waveforms in complementary PWM mode 1 to complementary PWM mode 3 under the following condition: Timer cycle data register value^{*1} ≤ Timer dead time data register value^{*2} × 2 + 2, data in the buffer register^{*3} may not be transferred to the compare register^{*3} and therefore the duty cycle may not be changed.

Measure

When generating PWM waveforms in complementary PWM mode 1 to complementary PWM mode 3, set the timer cycle data registers^{*1} and timer dead time data registers^{*2} to values that satisfy the following condition:

$$\text{Timer cycle data register value}^{*1} > \text{Timer dead time data register value}^{*2} \times 2 + 2$$

Note 1. The TCDR register in MTU2 and MTU2a. Registers TCDRA and TCDRB in MTU3.

Note 2. The TDDR register in MTU2 and MTU2a. Registers TDDRA and TDDRB in MTU3.

Note 3. Refer to the corresponding User's Manual: Hardware for details on buffer registers and compare registers.

[Reference Documents]

Product	Document Title	Document Number	Module
RX62G Group	RX62G Group User's Manual: Hardware Rev.1.00	R01UH0321EJ0100	MTU3
RX62N Group, RX621 Group	RX62N Group, RX621 Group User's Manual: Hardware Rev.1.30	R01UH0033EJ0130	MTU2
RX62T Group	RX62T Group User's Manual: Hardware Rev.1.30	R01UH0034EJ0130	MTU3
RX630 Group	RX630 Group User's Manual: Hardware Rev.1.50	R01UH0040EJ0150	MTU2a
RX63N Group, RX631 Group	RX63N Group, RX631 Group User's Manual: Hardware Rev.1.60	R01UH0041EJ0160	MTU2a
RX63T Group	RX63T Group User's Manual: Hardware Rev.2.00	R01UH0238EJ0200	MTU3
RX210 Group	RX210 Group User's Manual: Hardware Rev.1.40	R01UH0037EJ0140	MTU2a
RX220 Group	RX220 Group User's Manual: Hardware Rev.1.00	R01UH0292EJ0100	MTU2a
RX21A Group	RX21A Group User's Manual: Hardware Rev.1.00	R01UH0251EJ0100	MTU2a