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Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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HITACHI SEMICONDUCTOR TECHNICAL UPDATE

DATE	10th August, 1999	No.	TN- EML - 048 A/E																																																	
THEME	Limitations on H8S/2227, 2237, 2258, 2238 E6000 emulator																																																			
CLASSIFICATION	<input type="checkbox"/> Spec. change <input type="checkbox"/> Supplement of Documents <input checked="" type="checkbox"/> Limitation on Use																																																			
PRODUCT NAME	HS2633EPI61H	Lot No. etc.	All																																																	
REFERENCE DOCUMENT	None	Effective Date	Permanent																																																	
		From																																																		
<p>When the H8S/2227, 2237, 2258, 2238 E6000 emulator (HS2633EPI61H) is used, note that there are the following limitations. These limitations are not applied to H8S/2633, 2623 series.</p> <p>1. Microcomputers that E6000 emulator (HS2633EPI61H) supports classified by using multiplier in two as Table.1</p> <p style="text-align: center;">Table.1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Multiplier</th> <th>Microcomputers</th> </tr> </thead> <tbody> <tr> <td>used</td> <td>H8S/2633 series, H8S/2623 series</td> </tr> <tr> <td>none</td> <td>H8S/2227 series, H8S/2237 series, H8S/2238 series, H8S/2258 series</td> </tr> </tbody> </table> <p>However, in the E6000 emulator (HS2633EPI61H), even if H8S/2227, 2237, 2238, 2258 series is selected, the multiplier operates and the number of instruction execution states is less than the actual microcomputer as Table.2(same as the H8S/2633, 2623 series).</p> <p style="text-align: center;">Table.2</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 25%;">Execution instruction</th> <th rowspan="2" style="width: 20%;">Mnemonic</th> <th colspan="2">Number of instruction execution states</th> </tr> <tr> <th style="width: 25%;">H8S/2227, 2237, 2238, 2258 series microcomputer operation</th> <th style="width: 30%; background-color: #cccccc;">E6000 emulator operation</th> </tr> </thead> <tbody> <tr> <td rowspan="2">MULXU</td> <td>MULXU.B Rs, Rd</td> <td style="text-align: center;">12</td> <td style="background-color: #cccccc; text-align: center;">3</td> </tr> <tr> <td>MULXU.W Rs, ERd</td> <td style="text-align: center;">20</td> <td style="background-color: #cccccc; text-align: center;">4</td> </tr> <tr> <td rowspan="2">MULXS</td> <td>MULXS.B Rs, Rd</td> <td style="text-align: center;">13</td> <td style="background-color: #cccccc; text-align: center;">4</td> </tr> <tr> <td>MULXS.W Rs, ERd</td> <td style="text-align: center;">21</td> <td style="background-color: #cccccc; text-align: center;">5</td> </tr> </tbody> </table> <p>2. When 8-bit timers are used in H8S/2227, 2237, 2238, 2258 series, clock input and reset input for timer are different from the actual microcomputer operation as the Table. 3. Do not use external clock/reset input for Timer 1 and 3 with E6000 emulator. Note: Channel 2 and 3 are not used by H8S/2227, 2237 series.</p> <p style="text-align: center;">Table.3</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Microcomputers</th> <th style="width: 20%;">Pin name</th> <th style="width: 10%;">Symbol</th> <th style="width: 25%;">Target channel of microcomputers</th> <th style="width: 30%;">E6000 emulator operation</th> </tr> </thead> <tbody> <tr> <td rowspan="2">H8S/2227, 2237, 2238, 2258 series</td> <td>Timer clock input pin 01</td> <td>TMCI01</td> <td>Ch0 and Ch1 can be selected</td> <td>Ch0 only operates correctly</td> </tr> <tr> <td>Timer reset input pin 01</td> <td>TMRI01</td> <td>Ch0 and Ch1 can be selected</td> <td>Ch0 only operates correctly</td> </tr> <tr> <td rowspan="2">H8S/ 2238, 2258 series</td> <td>Timer clock input pin 23</td> <td>TMCR23</td> <td>Ch2 and Ch3 can be selected</td> <td>Ch2 only operates correctly</td> </tr> <tr> <td>Timer reset input pin 23</td> <td>TMRI23</td> <td>Ch2 and Ch3 can be selected</td> <td>Ch2 only operates correctly</td> </tr> </tbody> </table> <p>3.The Contents of the HD64F2633 Technical Update(TN-H8*-135A) is available to the emulator.</p>				Multiplier	Microcomputers	used	H8S/2633 series, H8S/2623 series	none	H8S/2227 series, H8S/2237 series, H8S/2238 series, H8S/2258 series	Execution instruction	Mnemonic	Number of instruction execution states		H8S/2227, 2237, 2238, 2258 series microcomputer operation	E6000 emulator operation	MULXU	MULXU.B Rs, Rd	12	3	MULXU.W Rs, ERd	20	4	MULXS	MULXS.B Rs, Rd	13	4	MULXS.W Rs, ERd	21	5	Microcomputers	Pin name	Symbol	Target channel of microcomputers	E6000 emulator operation	H8S/2227, 2237, 2238, 2258 series	Timer clock input pin 01	TMCI01	Ch0 and Ch1 can be selected	Ch0 only operates correctly	Timer reset input pin 01	TMRI01	Ch0 and Ch1 can be selected	Ch0 only operates correctly	H8S/ 2238, 2258 series	Timer clock input pin 23	TMCR23	Ch2 and Ch3 can be selected	Ch2 only operates correctly	Timer reset input pin 23	TMRI23	Ch2 and Ch3 can be selected	Ch2 only operates correctly
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