To our customers,

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.

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Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

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RenesasTechnology Corp.

Product Category	MPU&MCU			Document No.	TN-SH7-A558A/E	Rev.	1.00
Title	SH7727 Error Correction of Hardware Manual about LCDC rotation display function			Information Category	Technical Notification		
Applicable Product	SH3-DSP SH7700 Series SH7727 Group	Lot No.		Reference Document	SH3-DSP SH7727 Hardware Manual (ADE-602-209C Rev. 4.0)		
		All					

SH3-DSP SH7727 Hardware Manual has following error of description.

1. page 741
 25.3.1 LCD Module Sizes which can be Displayed in this LCDC

Error:
 The overhead coefficient is 1.375 if the SDRAM in CL2 uses a 32-bit bus and 1.188 if it uses a 16-bit bus.

Correction:
 The overhead coefficient of the SDRAM in CL2 is as follows.
 When not use the hardware rotation function (ROT = 0), the overhead coefficient is 1.375 if the SDRAM in CL2 uses a 32-bit bus and 1.188
  if it uses a 16-bit bus.
 When using the hardware rotation function (ROT = 1), the overhead coefficient of the SDRAM in CL2 is as follows, by Access Unit Select
  (AU) and Bus Width.

Access Unit Select (AU)	32-bit Bus Width	16-bit Bus Width
4-burst operation	2.500	1.750
8-burst operation	1.750	1.375
16-burst operation	1.375	1.188
32-burst operation	1.188	1.094

2. page 742
 Table 25.3 Display Resolutions when Using Display Rotation

Error:
 Table 25.3 Display Resolutions when Using Display Rotation

Image for Display in Memory (X-Resolution × Y-Resolution)	LCD Module (X-Resolution × Y-Resolution)	Number of Colors for Display	
240 × 320	320 × 240	Monochrome	4 bpp
			8 bpp
		Color	8 bpp
			16 bpp
234 × 320	320 × 234	Monochrome	8 bpp
		Color	16 bpp
80 × 160	160 × 80	Monochrome	2 bpp
			4 bpp
			8 bpp
		Color	4 bpp
			8 bpp
			16bpp
64 × 128	128 × 64	Monochrome	1 bpp
			2 bpp
			4 bpp
			8 bpp
		Color	4 bpp
			8 bpp

Correction:
Table 25.3.1 Limits on the Resolution of Rotated Displays, Burst Length, and Connected Memory   (32-bit SDRAM)

Image for Display in Memory (X-Resolution × Y-Resolution)	LCD Module (X-Resolution × Y-Resolution)	Number of Colors for Display		Number of Column Address Bits of SDRAM	Limitation on the Burst Length of LCDC (LDSMR*)
240 × 320	320 × 240	Monochrome	4 bpp (packed)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			4 bpp (unpacked)	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
			6 bpp	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
		Color	8 bpp	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
			16 bpp	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
234 × 320	320 × 234	Monochrome	6 bpp	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
		Color	16 bpp	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
80 × 160	160 × 80	Monochrome	2 bpp	8bit	—
				9bit	—
				10bit	—
			4 bpp (packed)	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			4 bpp (unpacked)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			6 bpp	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
		Color	4 bpp (packed)	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			4 bpp (unpacked)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			8 bpp	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			16 bpp	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
64 × 128	128 × 64	Monochrome	1 bpp	8bit	—
				9bit	—
				10bit	—
			2 bpp	8bit	—
				9bit	—
				10bit	—
			4 bpp (packed)	8bit	—
				9bit	—
				10bit	—
			4 bpp (unpacked)	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			6 bpp	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
		Color	4 bpp (packed)	8bit	—
				9bit	—
				10bit	—
			4 bpp (unpacked)	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			8 bpp	8bit	Not more than 16 bursts
				9bit	—
				10bit	—

Note: * Specify the data of the number of line specified as burst length can be stored in the same row address alignment of SDRAM.

Table 25.3.2 Limits on the Resolution of Rotated Displays, Burst Length, and Connected Memory   (16-bit SDRAM)

Image for Display in Memory (X-Resolution × Y-Resolution)	LCD Module (X-Resolution × Y-Resolution)	Number of Colors for Display		Number of Column Address Bits of SDRAM	Limitation on the Burst Length of LCDC (LDSMR*)
240 × 320	320 × 240	Monochrome	4 bpp (packed)	8bit	Not more than 4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
			4 bpp (unpacked)	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
			6 bpp	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
		Color	8 bpp	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
			16 bpp	8bit	Unusable
				9bit	Unusable
				10bit	4 bursts
234 × 320	320 × 234	Monochrome	6 bpp	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
		Color	16 bpp	8bit	Unusable
				9bit	Unusable
				10bit	4 bursts
80 × 160	160 × 80	Monochrome	2 bpp	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			4 bpp (packed)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			4 bpp (unpacked)	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
			6 bpp	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
		Color	4 bpp (packed)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			4 bpp (unpacked)	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
			8 bpp	8bit	4 bursts
				9bit	Not more than 8 bursts
				10bit	Not more than 16 bursts
			16 bpp	8bit	Unusable
				9bit	4 bursts
				10bit	Not more than 8 bursts
64 × 128	128 × 64	Monochrome	1 bpp	8bit	—
				9bit	—
				10bit	—
			2 bpp	8bit	—
				9bit	—
				10bit	—
			4 bpp (packed)	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			4 bpp (unpacked)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			6 bpp	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
		Color	4 bpp (packed)	8bit	Not more than 16 bursts
				9bit	—
				10bit	—
			4 bpp (unpacked)	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—
			8 bpp	8bit	Not more than 8 bursts
				9bit	Not more than 16 bursts
				10bit	—

Note: * Specify the data of the number of line specified as burst length can be stored in the same row address alignment of SDRAM.

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