

RENESAS TECHNICAL UPDATE

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|------------------------------|--|-------------------------------|---|--------------------------------------|----------------|---|
| Classification of Production | MPU&MCU | | No | TN-SH7-496A/E | Rev | 1 |
| THEME | Corrected the LCDC of SH7760 Hardware manual | Classification of Information | 1. Spec change ②. Supplement of Documents 3. Limitation of Use 4. Change of Mask 5. Change of Production Line | | | |
| PRODUCT NAME | HD6417760 | Lot No. | Reference Documents | SH7760 hardware manual (ADE-602-291) | Effective Date | |
| | | All | | | Eternity | |

There is the following modification about LCDC of SH7760.

1. Figure of Power-Supply Control Sequences

In Power-Supply Control Sequences of Figures 30.4 to 30.7, "Undefined" period is corrected to "Low" period for "(out) Display Data, timing signal" while the VCPWC is "Low".

Note:

(out) Display Data, timing signal: LCD_DATA[15:0], LCD_DON, LCD_CL1, LCD_CL2, LCD_M_DIPS, LCD_FLM
 They are "PZ" (Output pulled up with a built-in pull-up resistance) in power-on reset.

2. LCD Module Sizes that can be displayed with SH7760 LCDC

Please refer the following condition about a display size of the LCD Module.

There is a possibility not to be displayed correctly when the condition is not satisfied.

Condition:

$$\text{Horizontal resolution [pixel] x Display colors [bpp]} / 8 \times \text{Horizontal frequency [kHz]} / 1000 \\ < \text{Bck frequency [MHz]} / 3.6$$

3. Hardware rotation function

Please refer the following condition about a display size of the LCD Module.

There is a possibility not to be displayed correctly when the condition is not satisfied.

Condition:

$$\text{Horizontal resolution [pixel] x Display colors [bpp]} / 8 \times \text{Horizontal frequency [kHz]} / 1000 \\ < \text{Bck frequency [MHz]} / 50$$

E.g.) Horizontal resolution: 320pixel, Display colors: 16bpp, Horizontal frequency: 15.6kHz, Bck frequency: 66MHz
 $(320 * 16 / 8 * 15.6) / 1000 = 9.98[\text{Mbytes/sec}] > 66/50 = 1.32$: This result doesn't satisfy the conditional in using the hardware rotation function mode, so the setting of LCDC should be changed.