

To our customers,

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## Old Company Name in Catalogs and Other Documents

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On April 1<sup>st</sup>, 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 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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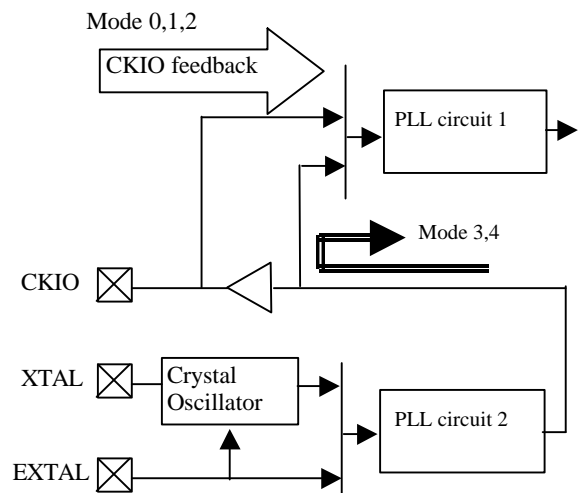
# HITACHI SEMICONDUCTOR TECHNICAL UPDATE

Classification of Production	Microprocessor		No	TN-SH7-461A/E	Rev	1
THEME	Supplement of hardware manuals regarding CKIO feedback	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	SH7708S/SH7708	Lot No.	SH7708 Series Hardware Manual Rev.9.0 ADE-602-105H SH7709 Hardware Manual Rev.2.0 ADE-602-123B SH7707 Hardware Manual Rev.1.0 ADE-602-137			Effective Date
	SH7709 SH7707	ALL				Reference Documents

This is the supplementary explanation regarding clock pulse generator of SH-3 (SH7708S, SH7708, SH7709, SH7707). SH7708R,SH7709A,SH7709S,SH7706,SH7705,SH7729,SH7729R and SH7727 are NOT applied.

(1) Behavior of clock pulse generator

In the case of Mode 0, Mode 1 or Mode 2, SH-3 (SH7708S, SH7708, SH7709, SH7707) matches the phase of the chip internal clock B̄o and external clock CKIO signal by feeding back the CKIO output signal to internal PLL circuit 1. However, PLL lock comes off when the glitch distortion of originating like the reflection noise etc. is generated in the vicinity of the CKIO pin, it is to become causes the system malfunction occasionally.

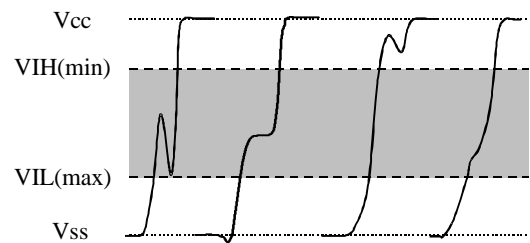


(2) Judgment of glitch distortion

Confirm to the signal waveform of SH-3 CKIO pin part, if there are reflective wave within the range of VIH(min) ~ VIL(max) for the waveform of rise or fall. The example of the waveform is shown in the chart. Reflected wave that is fixed voltage during the fixed time, can become glitch inside SH-3 (Case 2).

About VIH(min) and VIL(max), please refer DC characteristics of electrical characteristics.

The example of the CKIO waveform



- |   |   |  |   |
|---|---|--|---|
| (Case 1)  | (Case 2)  | (Case 3)   | (Case 4)  |
| There is a reflective wave within the range. (NG) | There is a reflective wave within the range. (NG) | There is not a reflective wave within the range. | There is a reflective wave within the range, but monotonous increase. |