

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>

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Renesas Electronics Corporation

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

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# HITACHI SEMICONDUCTOR TECHNICAL UPDATE

Classification of Production	MPU		No	TN-SH7-467A/E	Rev	1
THEME	USB Host Controller Incorrect Disconnect Detection		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	HD6417727, HD6417727B	Lot No.	Reference Documents	SH7727 Hardware Manual Rev.4.0 ADE-602-209C	Effective Date	
		ALL			Eternity	

HD6417727 and HD6417727B have the following usage notice.

## 1. Phenomenon

SH7727 USB Host Controller detects SE0 incorrectly in communicating, and consequently it may detect a device disconnect event in spite of NOT disconnected.

[Terms Explanation]

- SE0 : USB transmission is proceeded with D+/D- differential signals, and the D+/D- are opposite signal levels each other in ordinary. And for a special case, both D+/D- : "Low" status is defined as SE0.
- Device Disconnect Detect : USB Host Controller detects a disconnect event when detecting SE0 for a certain disconnect detect period or more.

## 2. Work Around

- (1) Please use Low Speed (1.5Mbps). At Low Speed, incorrect disconnect detection does not occur.
- (2) At Full Speed (12Mbps), please work around the following a) or b) to avoid the incorrect detection.
  - a) Cross over voltage level of D+, D- from USB Function Device shall be more than SH7727 AVcc\_USB x 0.55 (V).
  - b) "0" shall not continue more than 28 bits in a received data packet.

Note: "0" bit series should be counted in all bits of the packet,

SYNC + PID + DATA + CRC16 + EOP

counting EOP as 2 bits.