

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.

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

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Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU		Document No.	TN-H8*-A410A/E	Rev.	1.00
Title	Notes on Stopping the 10-bit A/D Converter		Information Category	Technical Notification		
Applicable Product	H8SX/1668R, 1668M Group H8SX/1658R, 1658M Group H8SX/1648,1648A,1648L,1648G,1648H Group H8SX/1638, 1638L Group H8SX/1622 Group	Lot No.	Reference Document	See below.		
		All Lots				

The following are notes regarding stopping the A/D converter in the Groups listed above. Adhere to these notes when using the A/D converter.

When clearing the A/D start bit (ADST bit) during A/D conversion, A/D conversion results may be stored incorrectly (ADDR), or when A/D conversion restarts, the interrupt flag may be misset. To avoid these events, follow the steps below.

(1) In Single Mode or Scan Mode (One-Cycle Scan Mode)

As the ADST bit is automatically cleared when A/D conversion is complete, do not clear the bit during A/D conversion.

(2) In Scan Mode (Continuous Scan Mode)

(a) Activating the A/D converter with software

Do not clear the ADST bit during A/D conversion. When stopping A/D conversion, rewrite the SCANE bit to change modes from scan mode to single mode. By rewriting the SCANE bit, the ADST bit is not cleared and the A/D converter is stopped.

However, after rewriting the SCANE bit, A/D conversion is stopped and until the A/D end flag (ADF) becomes 1, A/D conversion can take up to 1.5ch to complete. Also, do not use the ADDR value after A/D conversion is completed. Refer to the settings in Figure 1 for details.

(b) Activating the A/D converter with an external trigger

Do not clear the ADST bit during A/D conversion. When stopping A/D conversion, disable external triggers before rewriting the SCANE bit to change modes from scan mode to single mode. By rewriting the SCANE bit, the ADST bit is not cleared and the A/D converter is stopped.

However, after rewriting the SCANE bit, A/D conversion is stopped and until the A/D end flag (ADF) becomes 1, A/D conversion can take up to 1.5ch to complete. Also, do not use the ADDR value after A/D conversion is completed. Refer to the settings in Figure 2 for details.

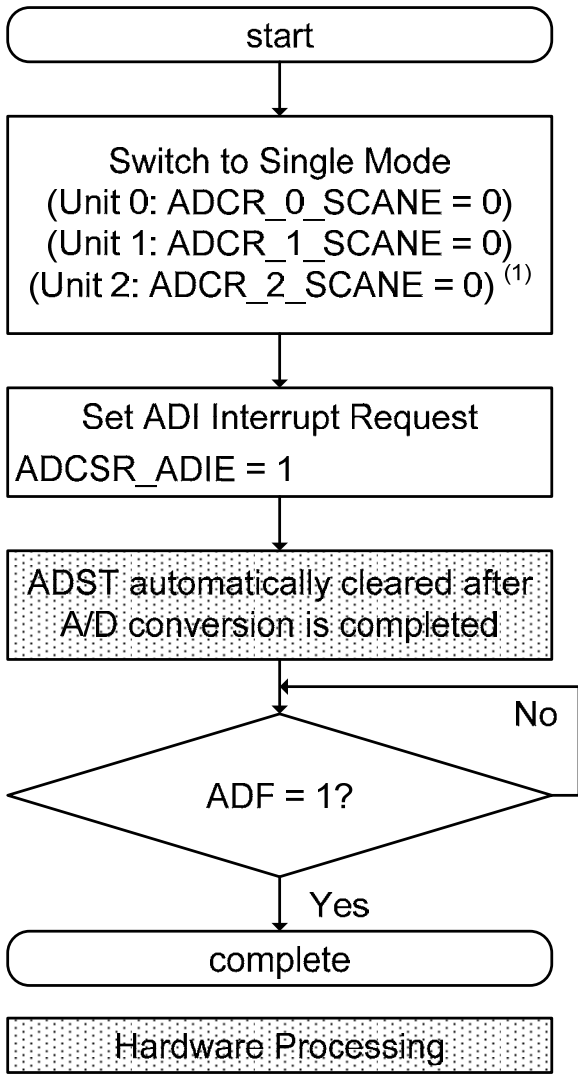


Figure 1: Stopping Continuous Scan Mode by Starting the A/D Converter

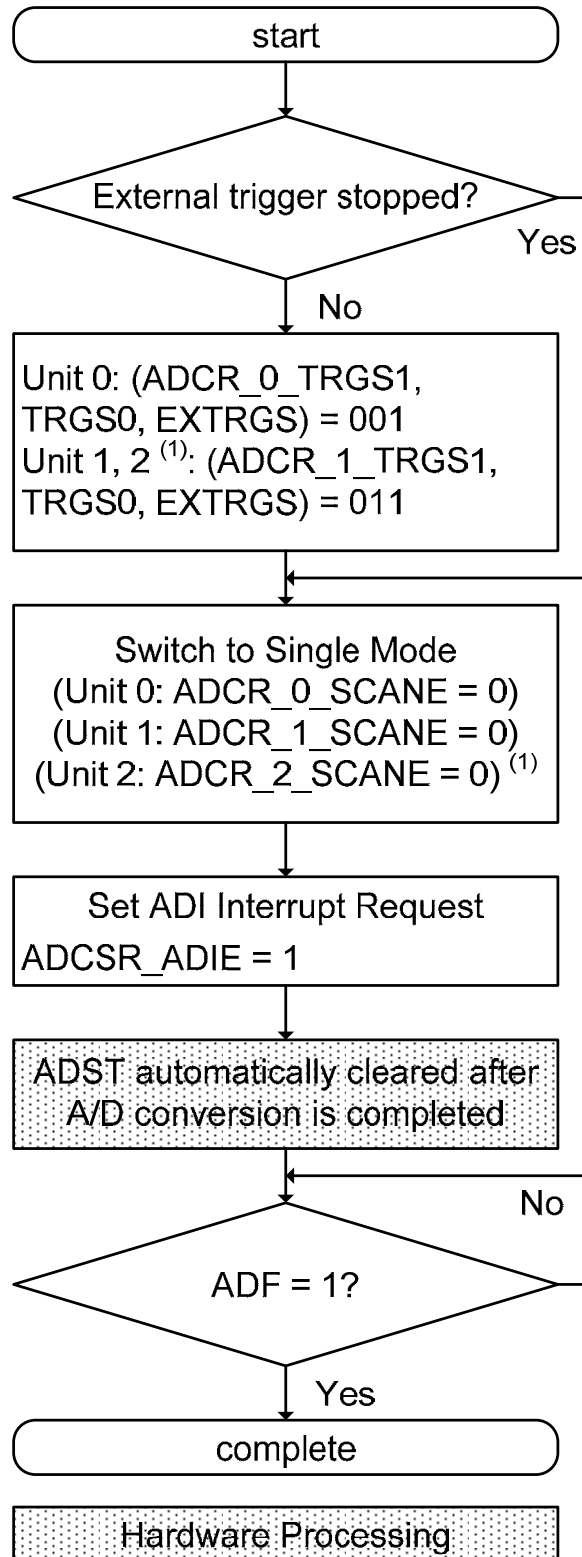


Figure 2: Entering Continuous Scan Mode by External Trigger

Note:

1. The H8SX/1648, 1648A, 1648L, 1648G, 1648H Group has three embedded units. The H8SX/1622 Group has one embedded unit. All other groups have two embedded units.

Reference Document

H8SX/1638 Group , H8SX/1638L Group Hardware Manual (REJ09B0364-0200)

H8SX/1648, H8SX/1648A, H8SX/1648L, H8SX/1648G, and H8SX/1648H Group Hardware Manual(REJ09B0365-0200)

H8SX/1658R Group, H8SX/1658M Group Hardware Manual (REJ09B0413-0200)

H8SX/1668R Group ,H8SX/1668M Group Hardware Manual (REJ09B0412-0200)

H8SX/1622 Group Hardware Manual (REJ09B0414-0100)