RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-SH7-A865A/E	Rev.	1.00
Title	Notes on the ADCR Usage in the A/D Converter (ADC)		Information Category	Technical Notification		
Applicable Product	See below.	Lot No.	Reference Document	See below.		
		All lots				

This update concerns usage of the A/D converter in the products listed below.

[Precaution]

Write Access to ADCR

- In single-cycle scan mode, if clearing of the ADST bit due to the end of AD conversion and setting of the ADST bit through write access to the ADCR coincide, the value of the ADST bit may be subsequently fixed to 1.

- In 2-channel scan mode*, if clearing of the ADST bit due to the end of AD conversion and setting of the ADST bit through write access to the ADCR coincide, the value of the ADST bit may be subsequently fixed to 1.

- In 2-channel scan mode*, if setting of the ADST bit due to the A/D conversion start trigger and clearing of the ADST bit through write access to the ADCR coincide, further A/D conversion start triggers may not be accepted.

[Countermeasures]

In the SH7239 Series, the above problems are avoided by applying all countermeasures from (1) to (3) described below.

In the SH7137, SH7210, SH7216, SH7243, and SH7280 Series, only the first problem is possible, and this is avoided by applying only countermeasure (1) described below.

(1) In single-cycle scan mode, do not write 1 to ADST while its current value is 1.

(2) In 2-channel scan mode*, do not write 1 to ADST while its current value is 1.

(3) In 2-channel scan mode*, when writing 0 to ADST, write 0 to ADST while starting A/D conversion by the A/D conversion start trigger is disabled (i.e. set the TRG1S and TRG2 bits in ADTSR to B'1010 to B'1111.)

Note: * Only products of the SH7239 Series have the 2-channel scan mode.

[Applicable Products and Related Documents]

Family	Group	Related Documents	Rev.	Control Code
SH7137	SH7131, SH7132, SH7136, SH7137	SH7137 Group Hardware Manual	3.00	REJ09B0402-0300
SH7210	SH7211	SH7211 Group Hardware Manual	3.00	REJ09B0344-0300
SH7216	SH7214, SH7216	SH7214 Group, SH7216 Group User's Manual: Hardware	3.00	R01UH0230EJ0300
SH7239	SH7237, SH7239	SH7239 Group, SH7237 Group User's Manual: Hardware	1.00	R01UH0086EJ0100
SH7243	SH7243	SH7280 Group, SH7243 Group User's Manual: Hardware	3.00	R01UH0229EJ0300
SH7280	SH7285, SH7286	SH7280 Group, SH7243 Group User's Manual: Hardware	3.00	R01UH0229EJ0300