RENESAS TECHNICAL UPDATE

Classification of Production	MPU			No	TN-SH7-475A/E	Rev	1
THEME	Notice about the overflow flag by FIPR and FTRV instruction command		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	SH7750 SH7750S SH7750R SH7751 SH7751R SH7760 SH-4 core use product	Lot No. All	Reference Documents	SH7750 series hardware manual ADE-602-124E SH7751 series hardware manual ADE-602-201B SH7760 hardware manual ADE-602-291		Effective Date Eternity	

There are the following notes about the overflow flag by FIPR and FTRV instruction command of SH-4.

1. Contents

When the maximum error produced in the result of the computation of FIPR or FTRV is larger than the maximum normalized number (H'7F7F FFFF), the overflow flag may be set to 1, even if the operation result is a positive or negative zero (H'0000 0000 or H'8000 0000).

2. Workaround

FIPR and FTRV instruction command is not used, but it is operated by FADD and FMUL and FMAC instruction command.

3. Example

The operation result after "FIPR FV4, FV0" which considers the following register value as an input, and FV0 command execution (FR7) is H'0000 0000 (positive zero). It is not concerned but an overflow flag is set.

When input the following register value, an operation results after "FIPR FV4, FV0" instruction command(FR7) execution is "H'0000 0000(positive zero).
Regardless of H'0000 0000 (positive zero) which is the result(FR7) after execution of "FIPR FV4, F0" instruction command, the overflow flag may be set.

FPSCR = H'00040001

FR0 = H'FF7EF631 , FR1 = H80000000 , FR2 = H'8087F451 , FR3 = H'7F7EF631
FR4 = H'7F7EF631 , FR5 = H'0087F451 , FR6 = H'7F7EF631 , FR7 = H'7F7EF631