

RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RH8-B0502A/E	Rev.	1.00
Title	RH850 G4x w/ FXU FMA normalization issue Report (Change of description)		Information Category	Technical Notification		
Applicable Product	G4x w/ FXU: RH850/E2x-FCC2, E2UH, E2H, E2x-FCC1, E2M RH850/U2B series	Lot No.	Reference Document	See related documents below.		
		All				

This technical update reports the change of description on G4x w/ FXU products of TN-RH8-B0420A/E.

In G4x w/ FXU, the following instructions are not applicable to the issue, so they are removed from [Modified Description].

- 2.4.4.47 FMAF.S
- 2.4.4.48 FMSF.S
- 2.4.4.49 FNMAF.S
- 2.4.4.50 FNMSF.S

1.[Modified Description] (After removing the descriptions that are not applicable to the issue.)

The following descriptions will be changed in each User's Manual: Software (Red character)

1-1. RH850G4MH User's Manual: Software

< Before >

2.5.4.23 FMAF.S4

[Description]

The operation is executed as if it were of infinite accuracy. The results of the multiply operation is not rounded, but the results of the add operation is rounded in accordance with the current rounding mode.

[Supplement]

The operation is executed as if the results of multiplication were of infinite accuracy and the results of the fused-multiply-add operation are rounded in accordance with the current rounding mode.

< After >

2.5.4.23 FMAF.S4

[Description]

~~The operation is executed as if it were of infinite accuracy.~~ The results of the multiply operation is not rounded, but the results of the add operation is rounded in accordance with the current rounding mode.

[Supplement]

~~The operation is executed as if the results of multiplication were of infinite accuracy and~~ The results of the fused-multiply-add operation are rounded in accordance with the current rounding mode.

< Before >

2.5.4.24 FMSF.S4

[Description]

The operation is executed as if it were of infinite accuracy. The results of the multiply operation is not rounded, but the results of the subtract operation is rounded in accordance with the current rounding mode.

[Supplement]

The operation is executed as if the results of multiplication were of infinite accuracy and the results of the fused-multiply-subtract operation are rounded in accordance with the current rounding mode.

< After >

2.5.4.24 FMSF.S4

[Description]

~~The operation is executed as if it were of infinite accuracy.~~ The results of the multiply operation is not rounded, but the results of the subtract operation is rounded in accordance with the current rounding mode.

[Supplement]

~~The operation is executed as if the results of multiplication were of infinite accuracy and~~ The results of the fused-multiply-subtract operation are rounded in accordance with the current rounding mode.

< Before >

2.5.4.25 FNMAF.S4

[Description]

The operation is executed as if it were of infinite accuracy. The results of the multiply operation is not rounded, but the results of the add operation is rounded in accordance with the current rounding mode.

[Supplement]

The operation is executed as if the results of multiplication were of infinite accuracy and the results of the fused-multiply-add operation are rounded in accordance with the current rounding mode.

< After >

2.5.4.25 FNMAF.S4

[Description]

~~The operation is executed as if it were of infinite accuracy.~~ The results of the multiply operation is not rounded, but the results of the add operation is rounded in accordance with the current rounding mode.

[Supplement]

~~The operation is executed as if the results of multiplication were of infinite accuracy and~~ The results of the fused-multiply-add operation are rounded in accordance with the current rounding mode.

< Before >

2.5.4.26 FNMSF.S4

[Description]

The operation is executed as if it were of infinite accuracy. The results of the multiply operation is not rounded, but the results of the subtract operation is rounded in accordance with the current rounding mode.

[Supplement]

The operation is executed as if the results of multiplication were of infinite accuracy and the results of the fused-multiply-subtract operation are rounded in accordance with the current rounding mode.

< After >

2.5.4.26 FNMSF.S4

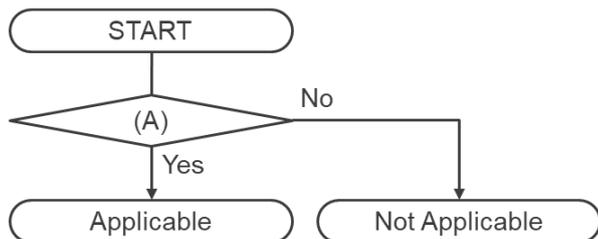
[Description]

~~The operation is executed as if it were of infinite accuracy.~~ The results of the multiply operation is not rounded, but the results of the subtract operation is rounded in accordance with the current rounding mode.

[Supplement]

~~The operation is executed as if the results of multiplication were of infinite accuracy and~~ The results of the fused-multiply-subtract operation are rounded in accordance with the current rounding mode.

3.[Judgement flow]



(A)	<p>Are FMA instructions used? (by assembler and compiler*.)</p> <p>1. Renesas CC-RH compiler generates FMA instructions by below option</p> <p>When -Xuse_fmaf or option is applied, FMA instructions are generated</p> <p>Supported from CC-RH V2.00.00 When -relaxed_math option is applied, FMA instructions are generated</p> <p>2. Green Hills Software (GHS) compiler generates FMA instructions by below option</p> <p>When one of -O* option is applied except -Onone, -Omaxdebug, and -Olink option, FMA instructions are generated</p> <p>When -fused_madd option (default) is applied, FMA instructions are generated, if -O* except -Onone, -Omaxdebug, and -Olink option is applied</p> <p>Supported from 2016.5.5 When -no_fused_madd option is applied, FMA instructions are not generated, even if -O* except -Onone, -Omaxdebug, and -Olink option is applied</p> <p>3. If another compiler is used and need judgement, please contact Renesas with compiler information. Also, if you want to use the version released after July 2022, please contact us. (The newest version on 19th/July/2022, CC-RH: V20.40.00, GHS: 2022.1.4)</p>
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4.[Future Action]

For the user's manual, the descriptions of red characters will be released by an errata.

<Reference Documents>

Series	Group	Document Title	Rev.	Document Number
RH850		RH850G4MH User's Manual: Software	2.10	R01US0209EJ0210