

RENESAS TECHNICAL UPDATE

1753, Shimonumabe, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8668 Japan
Renesas Electronics Corporation

Product Category	MPU/MCU		Document No.	TN-RX*-A116A/E	Rev.	1.00
Title	Temperature Sensor / Flash Memory Errata to using Temperature Sensor Calibration Data Registers and Unique ID Registers n.		Information Category	Technical Notification		
Applicable Product	RX630 group RX63N, RX631 group	Lot No. All lots of G version products	Reference Document	RX630 group RX63N, RX631 group User's Manual, Hardware section		

This document describes corrections to using Temperature Sensor Calibration Data Registers in Temperature Sensor section and Unique ID Registers n in Flash Memory section.

Page and section numbers are based on the RX630 Group. Refer to the table on the last page for the corresponding pages and chapters in other groups.

- Page 178 of 1681

Table 5.1 is corrected as follows:

Before correction

Table 5.1 List of I/O Registers (Address Order)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access States		Related Function	Reference Page
						ICLK ≥ PCLK	ICLK < PCLK		
FEFF FAC0h	FLASH	Unique ID register 0 ^{*9}	UIDR0	8	8	1CLK	1CLK	Flash Memory	1515
FEFF FAC1h	FLASH	Unique ID register 1 ^{*9}	UIDR1	8	8	1CLK	1CLK		1515
FEFF FAC2h	FLASH	Unique ID register 2 ^{*9}	UIDR2	8	8	1CLK	1CLK		1515
FEFF FAC3h	FLASH	Unique ID register 3 ^{*9}	UIDR3	8	8	1CLK	1CLK		1515
FEFF FAC4h	FLASH	Unique ID register 4 ^{*9}	UIDR4	8	8	1CLK	1CLK		1515
FEFF FAC5h	FLASH	Unique ID register 5 ^{*9}	UIDR5	8	8	1CLK	1CLK		1515
FEFF FAC6h	FLASH	Unique ID register 6 ^{*9}	UIDR6	8	8	1CLK	1CLK		1515
FEFF FAC7h	FLASH	Unique ID register 7 ^{*9}	UIDR7	8	8	1CLK	1CLK		1515
FEFF FAC8h	FLASH	Unique ID register 8 ^{*9}	UIDR8	8	8	1CLK	1CLK		1515
FEFF FAC9h	FLASH	Unique ID register 9 ^{*9}	UIDR9	8	8	1CLK	1CLK		1515
FEFF FACAh	FLASH	Unique ID register 10 ^{*9}	UIDR10	8	8	1CLK	1CLK		1515
FEFF FACBh	FLASH	Unique ID register 11 ^{*9}	UIDR11	8	8	1CLK	1CLK		1515
FEFF FACCh	FLASH	Unique ID register 12 ^{*9}	UIDR12	8	8	1CLK	1CLK		1515
FEFF FACDh	FLASH	Unique ID register 13 ^{*9}	UIDR13	8	8	1CLK	1CLK		1515
FEFF FACEh	FLASH	Unique ID register 14 ^{*9}	UIDR14	8	8	1CLK	1CLK		1515
FEFF FACFh	FLASH	Unique ID register 15 ^{*9}	UIDR15	8	8	1CLK	1CLK		1515
FEFF FAD2h	TEMPS	Temperature sensor calibration data register ^{*9}	TSCDRL	8	8	1CLK	1CLK	Temperature Sensor	1480
FEFF FAD3h	TEMPS	Temperature sensor calibration data register ^{*9}	TSCDRH	8	8	1CLK	1CLK		1480

Corrections

Table 5.1 List of I/O Registers (Address Order)

Address	Module Symbol	Register Name	Register Symbol	Number of Bits	Access Size	Number of Access States		Related Function	Reference Page
						ICLK ≥ PCLK	ICLK < PCLK		
FEFF FAC0h	FLASH	Unique ID register 0 *9	UIDR0	32	32	1CLK	1CLK	Flash Memory	1515
FEFF FAC4h	FLASH	Unique ID register 1 *9	UIDR1	32	32	1CLK	1CLK		1515
FEFF FAC8h	FLASH	Unique ID register 2 *9	UIDR2	32	32	1CLK	1CLK		1515
FEFF FACCh	FLASH	Unique ID register 3 *9	UIDR3	32	32	1CLK	1CLK		1515
FEFF FAD0h	TEMPS	Temperature sensor calibration data register *9	TSCDR	32	32	1CLK	1CLK	Temperature Sensor	1480

- Page 1480 of 1681

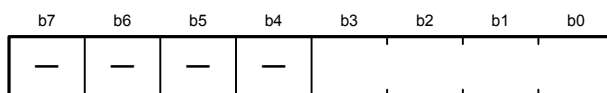
The description of Temperature Sensor Calibration Data Registers in 41.2.2 is corrected as follows:

Before correction

41.2.2 Temperature Sensor Calibration Data Registers (TSCDRH, TSCDRL)

- TSCDRH

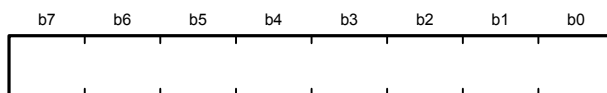
Address : FEFF FAD3h



Value after reset : Unique value for each chip

- TSCDRL

Address : FEFF FAD2h



Value after reset : Unique value for each chip

The TSCDRH and TSCDRL registers hold the temperature sensor calibration data measured for each chip at the time of shipment.

The temperature sensor calibration data is a digital value converted by the 12-bit A/D converter from the voltage output by the temperature sensor at Ta = Tj = 128°C and AVCC0 = VREFH0 = 3.3V. The TSCDRH and TSCDRL registers respectively hold the higher-order four bits and the lower-order eight bits of the result of conversion. If the endian setting for the CPU is little endian, read FEFF FAD2h as a 16-bit unit to obtain 12 bits of data at a time.

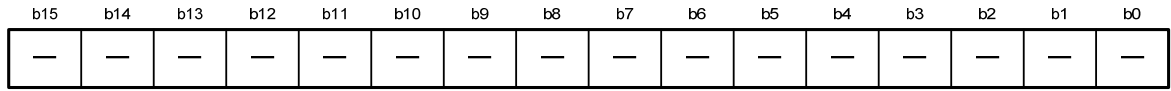
These registers cannot be modified by the user since they are in the FCU firmware area of the on-chip ROM.

These registers are reserved in on-chip ROM disabled extended mode, so access to them is prohibited in this case.

Corrections

41.2.2 Temperature Sensor Calibration Data Register (TSCDR)

Address: FEFF FAD0h



Bit	Symbol	Bit Name	Description	R/W
b15 to b0	—	Reserved	Unique value for each chip	R
b27 to b16	TSCD[11:0]	Temperature Sensor Calibration Data	The 12-bit A/D conversion results of the temperature sensor output measured at the time of shipment.	R
b31 to b28	—	Reserved	These bits are read as 0.	R

The TSCDR register hold the temperature sensor calibration data measured for each chip at the time of shipment.

The temperature sensor calibration data is a digital value converted by the 12-bit A/D converter from the voltage output by the temperature sensor at $T_a = T_j = 128^{\circ}\text{C}$ and $AVCC0 = VREFH0 = 3.3\text{V}$.

These registers cannot be modified by the user since they are in the FCU firmware area of the on-chip ROM.

These registers are reserved in on-chip ROM disabled extended mode, so access to them is prohibited in this case.

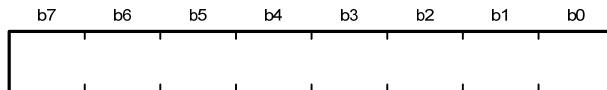
- Page 1515 of 1681

The description of Unique ID Registers n in 43.2.22 is corrected as follows:

Before correction

43.2.22 Unique ID Registers n (UIDRn) (n = 0 to 15)

Address(es): UIDR0 FEFF FAC0h, UIDR1 FEFF FAC1h, UIDR2 FEFF FAC2h, UIDR3 FEFF FAC3h, UIDR4 FEFF FAC4h, UIDR5 FEFF FAC5h, UIDR6 FEFF FAC6h, UIDR7 FEFF FAC7h, UIDR8 FEFF FAC8h, UIDR9 FEFF FAC9h, UIDR10 FEFF FACAh, UIDR11 FEFF FACBh, UIDR12 FEFF FACCh, UIDR13 FEFF FACDh, UIDR14 FEFF FACEh, UIDR15 FEFF FACFh

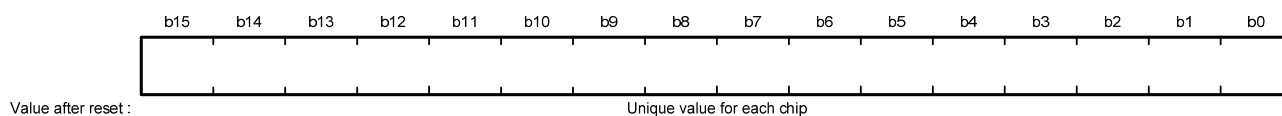


The UIDRn registers hold 16-byte ID codes (unique IDs) to identify each MCU and these registers are only present in the G-version products. These registers cannot be modified by the user since they are in the FCU firmware area of the on-chip ROM. These registers are reserved in on-chip ROM disabled extended mode, so access to them is prohibited in this case.

Corrections

43.2.22 Unique ID Registers n (UIDRn) (n = 0 to 3)

Address(es) : UIDR0 FEFF FAC0h, UIDR1 FEFF FAC4h, UIDR2 FEFF FAC8h, UIDR3 FEFF FACCh



The UIDRn registers hold 16-byte ID codes (unique IDs) to identify each MCU and these registers are only present in the G-version products. These registers cannot be modified by the user since they are in the FCU firmware area of the on-chip ROM. These registers are reserved in on-chip ROM disabled extended mode, so access to them is prohibited in this case.

< Reference Documents >

Applicable Product	Manual Title	Rev.	Document Number	Section Number (Page Number)		
				I/O Registers	Temperature Sensor	Flash Memory
RX630 Group	RX630 Group User's Manual Hardware	1.60	R01UH0040EJ0160	5 (178)	41 (1480)	43 (1515)
RX63N, RX631 Group	RX63N Group, RX631 Group User's Manual Hardware	1.80	R01UH0041EJ0180	5 (213)	45 (1782)	47 (1817)