

# RENESAS TECHNICAL UPDATE

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Product Category	MPU & MCU	Document No.	TN-RX*-A090B/E	Rev.	2.00
Title	Restriction on AVCC0 in the RX111 Group		Information Category	Technical Notification	
Applicable Product	RX111 Group Products with #30 or #U0 at the end of the orderable part number	Lot No.	Reference Document	RX111 Group User's Manual: Hardware Rev.1.00 (R01UH0365EJ0100) RX111 Group User's Manual: Hardware Rev.1.10 (R01UH0365EJ0110)	
		All			

This document describes a restriction on the operating conditions for AVCC0 in products with #30 or #U0 at the end of orderable part number in the RX111 Group.

## 1. Restriction

Set the voltage for the AVCC0 pin to the same voltage as the VCC pin.

## 2. Corrections to the Manual (Corrected in Rev.1.10)

Since the above restriction is added, descriptions in the manual are corrected as follows.  
(Page numbers are based on rev.1.00.)

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Descriptions in 30.7.10 are corrected as follows:

#### Before correction

- Relationship between power supply pin pairs (AVCC0–AVSS0, VREFH0–VREFL0, VCC–VSS)

**Relationship between AVSS0 and VSS: AVSS0 = VSS.** A 0.1-μF capacitor should be connected between each pair of power supply pins to create a closed loop with the shortest **route** possible as shown in Figure 30.16, and connection should be made so that the following conditions are satisfied at the supply side.

VREFL0 = AVSS0 = VSS

When the A/D converter is not used, the following conditions should be satisfied.

VREFH0 = AVCC0 = VCC and VREFL0 = AVSS0 = VSS

#### After correction

- Relationship between power supply pin pairs (AVCC0–AVSS0, VREFH0–VREFL0, VCC–VSS)

**The following conditions should be satisfied: AVCC0 = VCC, and AVSS0 = VSS.** A 0.1-μF capacitor should be connected between each pair of power supply pins to create a closed loop with the shortest **route** possible as shown in Figure 30.16, and connection should be made so that the following conditions are satisfied at the supply side.

VREFL0 = AVSS0 = VSS

When the A/D converter is not used, the following conditions should be satisfied.

VREFH0 = AVCC0 = VCC and VREFL0 = AVSS0 = VSS

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Table 36.2 is corrected as follows:

Before correction

**Table 36.2 Recommended Operating Voltage Conditions**

Item	Symbol	Value	Unit
Recommended operating voltage conditions	VCC, VCC_USB*1	1.8 to 3.6 (during no USB communication) 3.0 to 3.6 (during USB communication)	V
	AVCC0*2	1.8 to 3.6	V

Note 1. Set VCC and VCC\_USB to the same potential. Also, set VSS, AVSS0, and VSS\_USB to the same potential.

Note 2. AVCC0 and VCC can be set individually within the operating range. For details, 30.7.10 Voltage Range of Analog Power Supply Pins.

After correction

**Table 36.2 Operating Conditions**

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power supply voltages	VCC	The USB is not used.	1.8	—	3.6	V
		The USB is used.	3.0	—	3.6	V
	VSS		—	0	—	V
USB power supply voltages	VCC_USB		—	VCC	—	V
	VSS_USB		—	0	—	V
Analog power supply voltages	AVCC0 *1		—	VCC	—	V
	AVSS0		—	0	—	V

Note 1. For details, refer to section 30.7.10, Voltage Range of Analog Power Supply Pins.

### 3. Permanent Measure

The products will be improved.

The end of the orderable part number for improved products will be #3A or #UA.