

Notes on Using the QB-R5F10WMG-TB CPU Board for the RL78/L13

When using the QB-R5F10WMG-TB CPU board for the RL78/L13, take note of the problem on the following points that is described in this note.

- AVREFM and AVREFP pins

1. Applicable Products

QB-R5F10WMG-TB CPU Board for the RL78/L13, Revision A

Remarks: You can find out the revision by checking for short-circuit pads on the CPU board. If the board has short-circuit pads named "AVREFP" and "AVREFM", the board is Revision A. Refer to the document at the following URL for the locations of the short-circuit pads. The document will be released on Sept. 7.
<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20zz0151xj>

QB-R5F10WMG-TB Revision "A" Usage Note

2. Description

Results of conversion by the A/D converter will be wrong due to an incorrect pin connection on the CPU board when at least one of the following conditions applies.

- Condition 1: The P20/AVREFM/ANI1 pin is in use as AVREFM.
Condition 2: The P21/AVREFP/ANI0 pin is in use as AVREFP.

- Pin connection of CPU board

Specification on		
Pin	this board	Correct specification

P20/AVREFM/ANI1	Power (VDD)	GND or open-circuit
P21/AVREFP/ANI0	GND	Power (VDD) or open-circuit

Using the above two pins as port pins or analog input pins creates no problem.

Connecting the AVREFM pin to the power (VDD) and the AVREFP pin to GND does not damage the MCU.

3. Workaround

3.1 With the AVREFP pin connected to the power (VDD) and the AVREFM pin to GND

Follow the procedure below on the CPU board.

Step 1: Cut both the "AVREFM" and "AVREFP" short-circuit pads.

Step 2: Short-circuit pins 21 (P21/AVREFP/ANI0) and 23 (VDD) of the CN2 connector to each other.

Step 3: Short-circuit pins 22 (P20/AVREFM/ANI1) and 1 (GND) of the CN2 connector to each other.

3.2 With only the AVREFP pin connected to the power (VDD)

Follow the procedure below on the CPU board.

Step 1: Cut the "AVREFM" short-circuit pad.

Step 2: Short-circuit pins 21 (P21/AVREFP/ANI0) and 23 (VDD) of the CN2 connector to each other.

3.3 With only the AVREFM pin connected to GND

Follow the procedure below on the CPU board.

Step 1: Cut the "AVREFP" short-circuit pad.

Step 2: Short-circuit pins 22 (P20/AVREFM/ANI1) and 1 (GND) of the CN2 connector to each other.

Caution:

In any of these workarounds, if the cut in step 1 does not leave the pad completely open-circuit and steps 2 and 3 proceed or step 2 proceeds in that state, this may lead to damage when power (VDD) is supplied to the CPU board.

Make sure that the cut in step 1 absolutely breaks the electric connection.

For more details on these procedures, refer to the document at the following URL. The document will be released on Sept. 7.

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20zz0151xj>

4. Permanent Measure

Revision B, on which the short-circuit pads "AVREFM" and "AVREFP" of the Revision A board have been cut in advance of shipment, will go on sale.

We will not be replacing Revision A with Revision B boards.

If you are using a Revision A board, follow the appropriate procedure under 3, Workaround.

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