

To our customers,

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# **R8C/20-23 Group IC Socket Board**

## **R0K521238Z000BR**

### **Release Note, Version 1.00**

Renesas Solutions Corp.

April 1, 2007

Thank you for purchasing the R8C/20-23 IC socket board (R0K521238Z000BR).

This release note describes how to use the IC socket board. Be sure to read this note before using the product.

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## 1. Introduction

This release note describes usage and notes for the hardware included in the IC socket board (R0K521238Z000BR).

## 2. Notes on Use – Please Read This Carefully!

### [Removing the MCU]

To remove the MCU from the IC socket when the IC socket board is in use, make sure that the power supply switch on the IC socket board is turned off before removing.

### [Connecting the Flash Programmer]

Communication connectors CN1 and CN2 on the IC socket board are individually connected with the wired OR. Do not connect multiple flash programmers to the IC socket board. If the IC socket board is used when multiple flash programmers are connected, the MCU and flash programmer may be damaged.

## 3. Product Overview

The IC socket board is a write-only IC socket board for programming the R8C/20-23 flash MCUs via various flash programmers.

### Applicable MCUs \*1

R8C/20, 21, 22, 23 Group 48-Pin Version Flash MCUs (Package: PLQP0048KB-A (48P6Q-A))

\*1: Some MCUs may not be applicable depending on the flash programmer used. Check the applicable MCUs for the flash programmer.

### Applicable Flash Programmers

Renesas Technology Corp.

- Flash Development Toolkit
- Flash Starter (M3A-0806)

Web site: <http://www.renesas.com/>

## 4. Product Specifications

Table 4-1 shows the IC Socket Board Specifications.

Table 4-1 IC Socket Board Specifications

| Parameter             |                                  |   |
|-----------------------|----------------------------------|---|
| Operating Voltage     |                                  | 5.0 V $\pm$ 5 % (Supply from external power supply) |
| Operating Environment | 1. Operating Ambient Temperature | 20 °C $\pm$ 5 °C                                    |
|                       | 2. Humidity                      | No dew condensation allowed                         |

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## 5. Contents of Package

Table 5-1 shows the Contents of the IC Socket Board Package.

Table 5-1 Contents of IC Socket Board Package

| Product Name                      | Quantity | Remark                    |
|-----------------------------------|----------|---------------------------|
| IC Socket Board (R0K521238Z000BR) | 1        |                           |
| Power Supply Cable                | 1        |                           |
| Release Note                      | 2        | Japanese - 1, English - 1 |

## 6. IC Socket Board Configuration

### 6.1. External Specifications

Table 6-1 shows the External IC Socket Board Specifications.

Table 6-1 External IC Socket Board Specifications

| Item       | Description                           | Remark           |
|------------|---------------------------------------|------------------|
| Connector  | CN1: Communication connector          | 10-Pin Connector |
|            | CN2: Communication connector          | 14-Pin Connector |
|            | CN3: Power supply connector           |                  |
| IC Socket  | IC1: 48-pin IC socket                 | PLQP0048KB-A     |
| Oscillator | CST1: Unimplemented                   |                  |
| Switch     | SW1: Tactile-type power supply switch |                  |
| LED        | LED1: Power supply indicator          |                  |
| Jumper     | JP1: For MODE pin "L" input switching |                  |

### 6.2. External Power Supply Specifications

Single Power Supply Connector (CN3)

An external power supply is necessary. Apply 5.0 V  $\pm$ 5 % to the connector.

### 6.3. Jumper Specifications

JP1

JP1 is used for "L" input switching of the MODE pin (8 pins). Table 6-2 shows the JP1 Settings.

Table 6-2 JP1 Settings

| Jumper Setting | Description | Remark  |
|----------------|-------------|---------|
| Open           | Pull-up     | Default |
| Short          | "L" input   |         |

### 6.4. Switch Specifications

SW1 is used for the power supply switch on the IC socket board.

## 6.5. Connector Specifications

### 1) CN1: 10-pin connector

Table 6-3 shows the CN1 Pin Assignment.

| Table 6-3 CN1 Pin Assignment |           |
|------------------------------|-----------|
| Pin No.                      | Signal *1 |
| 1                            | Vcc       |
| 2                            | -----     |
| 3                            | MODE      |
| 4                            | (RxD *2)  |
| 5                            | -----     |
| 6                            | -----     |
| 7                            | GND       |
| 8                            | RESET     |
| 9                            | -----     |
| 10                           | (TxD *2)  |

\*1: MCU signal name

\*2: Communication pin for Flash Starter (M3A-0806)

### CN1 Reference

Product Name: 2.54 mm Pitch 10-Pin Connector (Straight)

Part Number: HIF3FC-10PA-2.54DSA

Manufacturer: Hirose Electric Co., Ltd

### 2) CN2: 14-pin connector

Table 6-4 shows the CN2 Pin Assignment.

| Table 6-4 CN2 Pin Assignment |           |
|------------------------------|-----------|
| Pin No.                      | Signal *1 |
| 1                            | N.C.      |
| 2                            | GND       |
| 3                            | N.C.      |
| 4                            | GND       |
| 5                            | N.C.      |
| 6                            | GND       |
| 7                            | MODE      |
| 8                            | Vcc       |
| 9                            | N.C.      |
| 10                           | GND       |
| 11                           | N.C.      |
| 12                           | GND       |
| 13                           | RESET     |
| 14                           | GND       |

\*1: MCU signal name

### CN2 Reference

Product Name: 2.54 mm Pitch 14-Pin Connector (Straight)

Part Number: 7614-6002

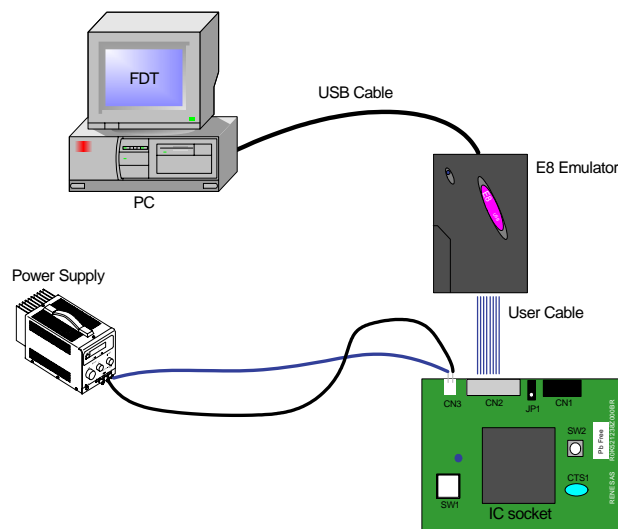
Manufacturer: Sumitomo 3M Limited

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## 7. How to Use

### 7.1. Setup

- Procedure 1 Connect an external power supply to the IC socket board.  
\*The IC socket board, MCU or flash programmer may be damaged due to incorrect insertion. Make sure that the polarity of the power supply is correct.
- Procedure 2 Connect the flash programmer to the connector CN1 (CN2 for E8).  
Only when the Flash Starter (M3A-0806) is used, short JP1 and implement the 20 MHz oscillator.
- Procedure 3 Supply power from the external power supply.  
Make sure that the power LED on the IC socket board is off at this time.  
\*If the power LED is on, press down on the power switch to turn off the LED.
- The setup is now complete.



**Figure 7.1 IC Socket Board Connection Example**

### 7.2. Programming Procedures

- Procedure 1 Mount the MCU into the IC socket on the IC socket board.  
\*The MCU may be damaged due to incorrect insertion. Make sure that it is inserted in the correct direction.
- Procedure 2 Press down on the power switch and check that the power LED is on.
- Procedure 3 Program the MCU internal flash memory using the flash programmer.  
\*Refer to the programmer manual of the flash programmer before programming.
- Procedure 4 Press down on the power switch and check that the power LED is off.  
When the LED is off, remove the MCU from the IC socket board.  
It is possible to go back to the procedure 1 and continue programming the MCU.

## 8. Obtaining the Latest Information

For the latest product information on this product, please visit our website below:  
<http://www.renesas.com/>