
R8C/56E Group

R01AN0573EJ0100

Rev.1.00

Pin assignment using PMC function (Pin assignment figure)

Mar 15, 2012

Introduction

This application note describes the Pin Assignment using the peripheral mapping controller (referred to as PMC after here).

Target Device

R8C/56E group: 64-pin product

1. Pin Assignment

R8C/56E group have the PMC function. The PMC function can be used to change the pin assignment of I/O ports to either standard pin assignment, timer function priority or communication function priority.

Changing pins must be performed using bits PMCSEL1 to PMCSEL0 in the PMCSEL register (pin assignment select register).

- [Note]
1. Once the PMCSEL register is written, no additional writes can be performed.
 2. Please perform the setting of the PMCSEL register before setting the I/O of the ports.

Refer to [User’s Manual: Hardware] for the bits configuration of the PMCSEL register.

Figure 1.1 to Figure 1.3 show the standard pin assignment, the timer function priority pin assignment and the communication function priority pin assignment.

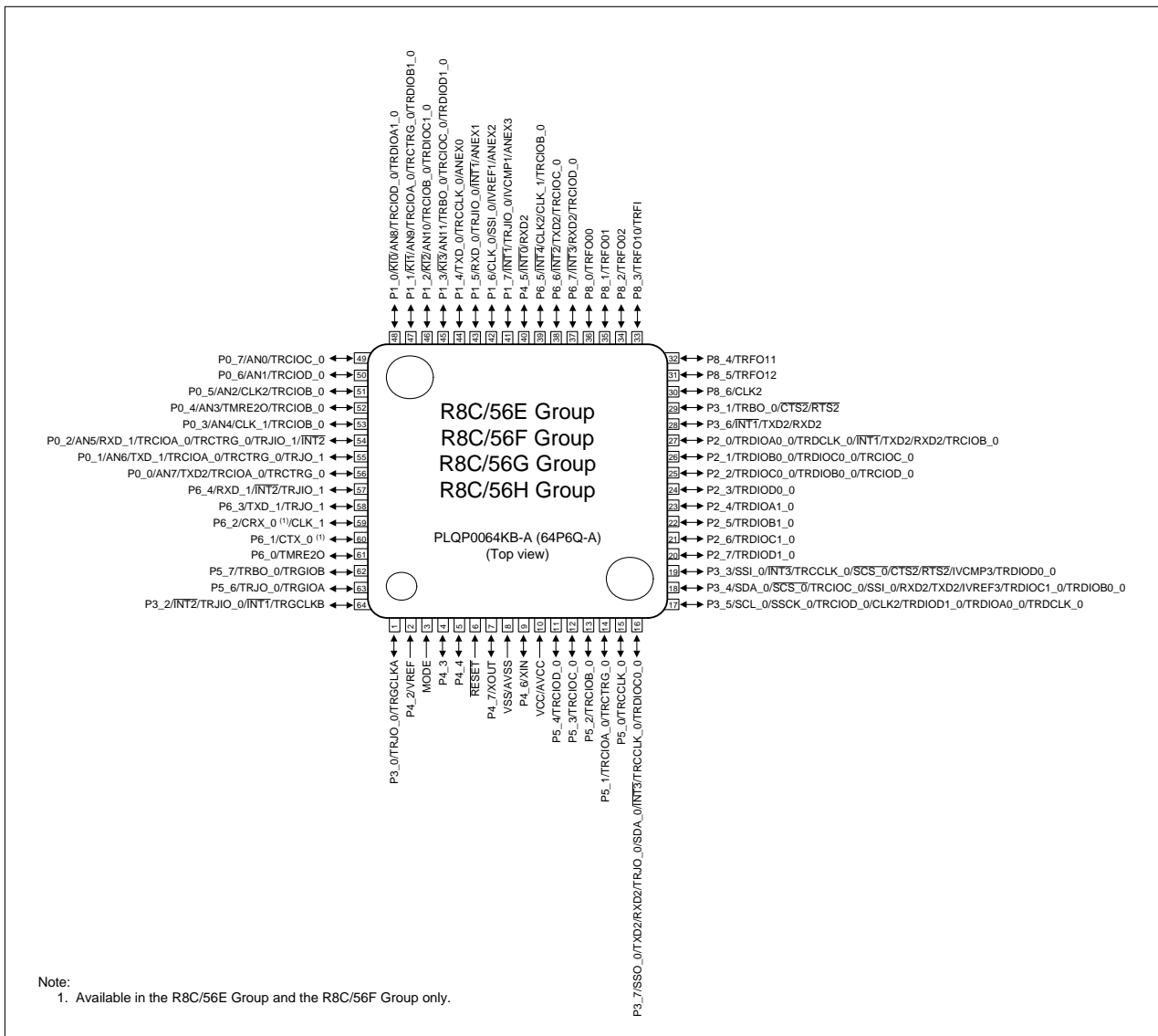


Figure 1.1 Standard Pin Assignment (PMCSEL1, PMCSEL0 = 00b)

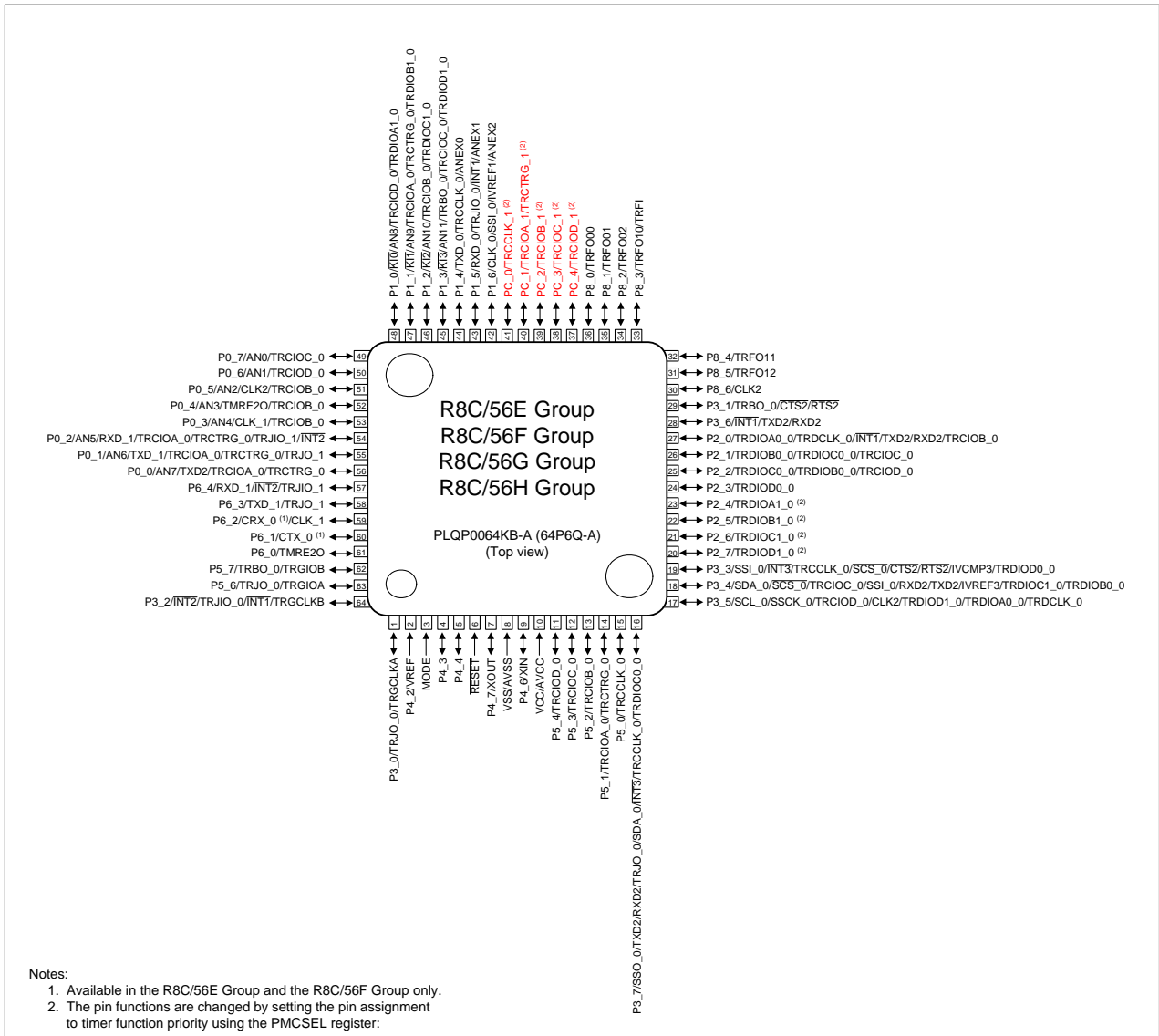


Figure 1.2 Timer Function Priority Pin Assignment (PMCSEL1, PMCSEL0 = 01b)

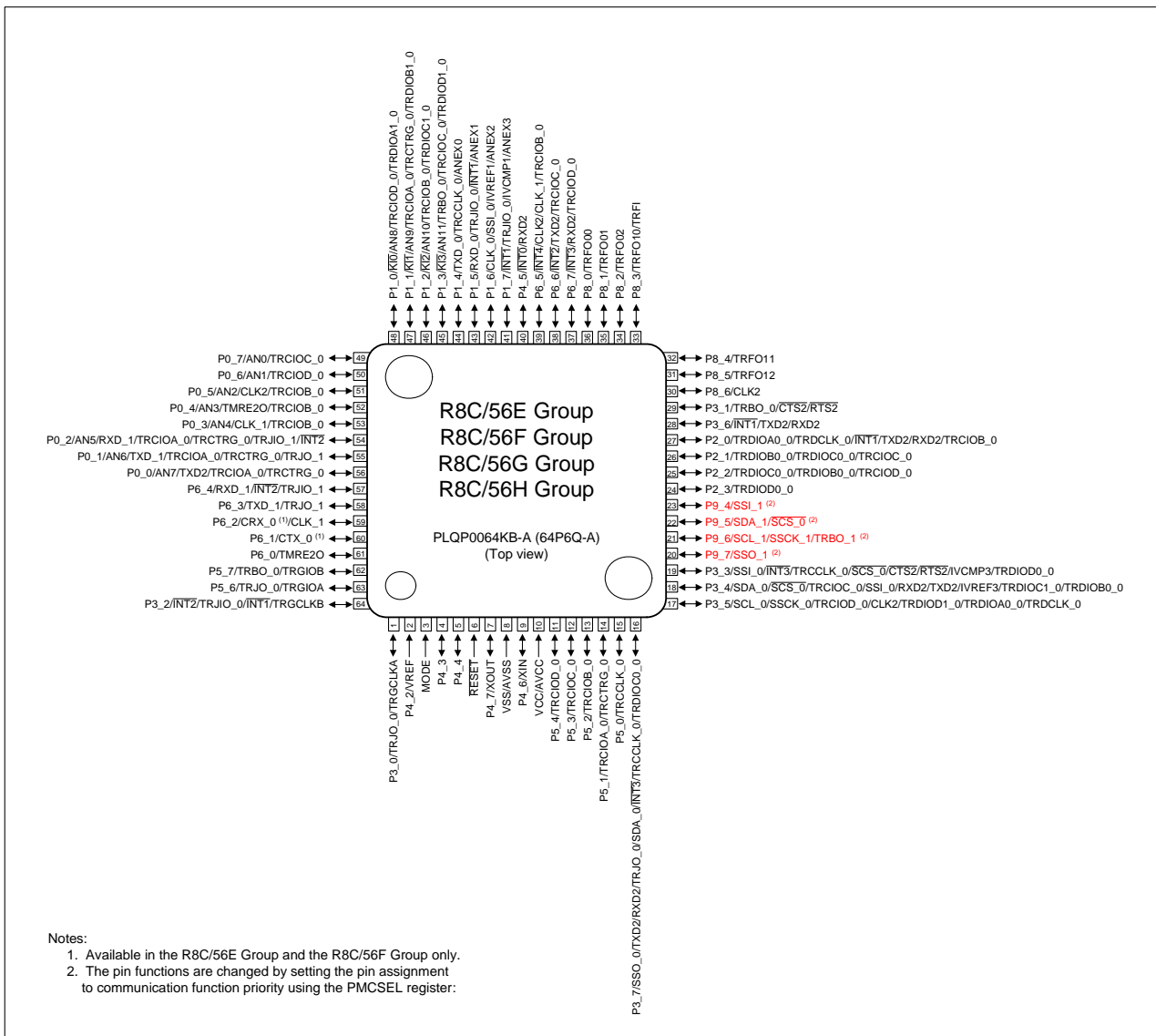


Figure 1.3 Communication Function Priority Pin Assignment (PMCSEL1, PMCSEL0 = 10b)

Reference Documents

R8C/56E Group User's Manual: Hardware Rev.1.00

The latest version can be downloaded from the Renesas Electronics website.

Technical Update/Technical News

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General Precautions in the Handling of MPU/MCU Products

The following usage notes are applicable to all MPU/MCU products from Renesas. For detailed usage notes on the products covered by this manual, refer to the relevant sections of the manual. If the descriptions under General Precautions in the Handling of MPU/MCU Products and in the body of the manual differ from each other, the description in the body of the manual takes precedence.

1. Handling of Unused Pins

Handle unused pins in accord with the directions given under Handling of Unused Pins in the manual.

- The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible. Unused pins should be handled as described under Handling of Unused Pins in the manual.

2. Processing at Power-on

The state of the product is undefined at the moment when power is supplied.

- The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the moment when power is supplied.

In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the moment when power is supplied until the reset process is completed.

In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the moment when power is supplied until the power reaches the level at which resetting has been specified.

3. Prohibition of Access to Reserved Addresses

Access to reserved addresses is prohibited.

- The reserved addresses are provided for the possible future expansion of functions. Do not access these addresses; the correct operation of LSI is not guaranteed if they are accessed.

4. Clock Signals

After applying a reset, only release the reset line after the operating clock signal has become stable. When switching the clock signal during program execution, wait until the target clock signal has stabilized.

- When the clock signal is generated with an external resonator (or from an external oscillator) during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Moreover, when switching to a clock signal produced with an external resonator (or by an external oscillator) while program execution is in progress, wait until the target clock signal is stable.

5. Differences between Products

Before changing from one product to another, i.e. to one with a different part number, confirm that the change will not lead to problems.

- The characteristics of MPU/MCU in the same group but having different part numbers may differ because of the differences in internal memory capacity and layout pattern. When changing to products of different part numbers, implement a system-evaluation test for each of the products.

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