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RENESAS TECHNICAL UPDATE

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Product Category	MPU & MCU		Document No.	TN-16C-A202A/E	Rev.	1.00
Title	Specification Modifications in M16C/64 Groups		Information Category	Technical Notification		
Applicable Product	M16C/64 Group	Lot No. —	Reference Document			

Specifications of the M16C/64 Group have changed. MCU usage and setting procedures have also been added or changed.

1. Specification Changes

1.1 External Bus

When the $\overline{\text{HOLD}}$ function is used, ROM or RAM may be misread. Therefore, the program may not be executed as expected.
Do not use the $\overline{\text{HOLD}}$ function. In memory expansion mode or microprocessor mode, connect the P5_5 pin ($\overline{\text{HOLD}}$) to VCC2 via a resistor and leave the P5_4 pin ($\overline{\text{HLDA}}$) open.

1.2 Serial Interface UARTi

Slave mode has been deleted because while in special mode 2, when the CKPH bit in the UiSMR3 register is 1 (with clock delay) in special mode 2, slave mode is unavailable.

1.3 Flash Memory

Note the following when using the block blank check command:

- The block blank check command is designated for use with a programmer.
- When an instantaneous power failure occurs while the block erase command is executed, execute the block erase command again. The block blank check command cannot be used to check whether the erase operation is successfully completed or not.

1.4 Electrical Characteristics

The standard values of the $\overline{RDY}$ signal have been modified to the values shown below.

VCC1 = VCC2 = 5 V

Symbol	Parameter	Standard (Min.)		Unit
		Premodification	Post modification	
$t_{su(RDY-BCLK)}$	$\overline{RDY}$ input setup time	30	80	ns

VCC1 = VCC2 = 3 V

Symbol	Parameter	Standard (Min.)		Unit
		Premodification	Post modification	
$t_{su(RDY-BCLK)}$	$\overline{RDY}$ input setup time	40	85	ns

2. Additions and Changes on Usage and Setting Procedures

2.1 Serial Interface UARTi

As special mode 1 (I^2C mode) is somewhat difficult to understand with only the explanation in the user's manual, application notes are being prepared. When developing a program using I^2C mode, refer to the following application notes:

I^2C-bus Interface Using UARTi Special Mode 1 (REJ05B1349)

I^2C-bus Interface Using UARTi Special Mode 1 (Master Transmit/Receive) (REJ05B1422)

I^2C-bus Interface Using UARTi Special Mode 1 (Slave Transmit/Receive) (REJ05B1423)

2.2 Flash Memory

2.2.1 FMSTP Bit

When the FMR22 bit is 1 (slow read mode enabled), do not set the FMSTP bit in the FMR0 register to 1 (flash memory operation stopped). Also, when the FMSTP bit is 1, do not set the FMR22 bit to 1.

2.2.2 User Boot Mode

Note the following when using user boot mode:

Following notes have been added to the user boot mode description:

- When restarting the MCU in user boot mode after starting it in user boot mode, RAM becomes undefined.
- As the reset sequence differs, the time necessary for starting the program is longer than in single-chip mode.
- Functions in user boot mode cannot be debugged by the on-chip debugging emulator or full spec emulator.
- While using user boot mode, do not change the input level of the pin used for user boot entry (the pin selected by addresses 13FF8h to 13FFAh).
- If values at addresses 13FF0h to 13FF7h are “UserBoot” in ASCII code, and values at addresses 13FF8h to 13FFBh are all 00h, the MCU does not enter standard serial I/O mode. Therefore, the programmer or on-chip debugger cannot be connected.