October 2004

Important Notices

Thank you for your continued patronage of Toshiba microcontrollers.

This page gives you important information on using Toshiba microcontrollers. Please be sure to check each item for proper use of our products.

Datasheet Modifications regarding I^2C Bus Mode Control (October 2004)

*If your datasheet is dated 31 March 2003 or earlier, please download the latest datasheet or request it from your local Toshiba office.

TOSHIBA Microcontrollers
900 Family
(TMP91CW11) (TMP91PW11)

October 2004

Datasheet Modifications: I²C Bus Mode Control

The following modifications (shown in red) will be made to the technical datasheets in the next revision.

- **In the explanation of the serial bus interface control register 1 in "3.10.4 I²C Bus Mode Control", "3.11.4 I²C Bus Mode Control", and "3.12.4 I²C Bus Mode Control"**
  1. Delete the setting examples where the serial clock frequency exceeds 100 kHz.
  2. Add the following note.

Internal serial clock selection

000	- (Note)	System clock: fc Clock gear: fc/1 fc = 20 MHz (internal SCL output)
001	- (Note)	
010	- (Note)	
011	75.8 kHz	
100	38.5 kHz	
101	19.4 kHz	
110	9.73 kHz	
111	Reserved	

Note: This I²C bus circuit does not support the Fast mode. It supports the Standard mode only. Although the I²C bus circuit itself allows the setting of a baud rate over 100 kbps, the compliance with the I²C specification is not guaranteed in that case.

- **In "3.10.5 Control in I²C Bus Mode", "3.11.5 Control in I²C Bus Mode", and "3.12.5 Control in I²C Bus Mode"**
  1. Add the following sentence about the communication baud rate.
  2. Modify the equations as shown below.

(3) Serial clock

1. Clock source

SBI0CR1X<SCK2:0> is used to specify the maximum transfer frequency for output on the SCL pin in Master mode. **Set a communication baud rate that meets the I²C bus specification, such as the shortest pulse width of t_{LOW}, based on the equations shown below.**

$$t_{LOW} = 2^{n-1}/f_{SBI}$$
$$t_{HIGH} = 2^{n-1}/f_{SBI} + 8/f_{SBI}$$
$$fscl = 1/(t_{Low} + t_{HIGH})$$
$$= \frac{f_{SBI}}{2^n + 8}$$