

TOSHIBA

SP-900-003

TIMER16

--Generating Interrupts at Regular Intervals Using 16-bit Timer--

Rev 1.1
Dec. 2005

1. Target MCU

This sample program is created targeting at the TLCS-900/H series.
When using an MCU other than the TLCS-900/H series, refer to the data sheet for that MCU.

2. Overview

This sample program generates interrupts at regular intervals using an 16-bit timer.

3. Description

16-bit interval timers 8 and 9 can each operate as an independent 16-bit interval timer. A timer must be stopped before its function and count are set.

The following describes timer 8 as an example.

Example: Generating timer interrupts at intervals of 20 ms when $f_c = 25$ MHz

To generate timer interrupts at regular intervals, set a count value in 16-bit timer register TREG9 and enable INTTR9 interrupts.

- Stop timer 8 and clear its contents to 0.
- Set 16-bit interval timer mode and select input clock $\phi T1$ (320 ns when $f_c = 25$ MHz).
- Write $20 \text{ ms} / \phi T1 = 62500$ (0xf424) to the timer register via a register.
- Enable INTTR9 and set its interrupt level to 5 (or any appropriate level between 1 and 6).
- Start timer 8.

4. Passing Data

The counter value for activating timer 8 is the input parameter.
This sample program uses register WA to set a counter value.

Input: Timer register value (WA = 0xf424)

5. Interrupts

- INTTR9: 20-ms cycle (example)

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