

TOSHIBA

SP-870-020

CNTMSR

--Measuring Motor Speed Using Event Counter--

Rev 1.1
Dec. 2005

1. Target MCU

This sample program is created targeting at the TLCS-870/X series.
When using an MCU other than the TLCS-870/X series, refer to the data sheet for that MCU.

2. Overview

This sample program measures the rotation speed of a motor (rpm) using an event counter.

3. Description

The program measures the rotation speed of a motor or other devices. It receives waveforms from an input device, such as a Hall effect device, through the TC1 pin.

The program measures the rotation speed by performing software capture at intervals of 100 ms. A value set in the timer register should be greater than the maximum possible input frequency to prevent the timer from being cleared upon a match between values. The program calculates the sum and average each time it has measured the speed ten times.

4. Passing Data

Use the following variables to exchange data:

[Variable: GMOTFLG] Measurement flag

bit 7 FMOT01 =0: During measurement =1: Measurement stored (once)

bit 6 FMOT10 =0: During measurement =1: Average calculated (for 10 measurements)

[Variable: GMOTDAT] Measurement data

[Variable: GMOTADD] Sum of 10 measurements (2 bytes)

[Variable: GMOTAVR] Average of 10 measurements (2 bytes)

5. Interrupts

- TC2 interrupts (10-ms cycle)

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