



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 generates a tone using PDO.

3. Description

The program uses PDO to generate a tone of 245 Hz to 15.6 kHz (@16 MHz).
It can generate various tones based on frequencies and on/off times stored in ROM.
Tones are available in steps of 10 ms. The tone output pin is PDO5 (P33).

- Tone data

Byte 1	Repetition count (00: infinite)	
Byte 2	Frequency data	1/(frequency x 2)/8 us
Byte 3	On time	x10 ms
Byte 4 and subsequent bytes	Off time	x10 ms
	On time and off time repeated	
	00 (terminator)	

- Example of tone data

(1) Key touch tone



Outputs a 1008-Hz tone for 50 ms. -> 001h, 03Eh, 005h, 000h

(2) Error tone



Outputs a 440-Hz tone by turning it on for 100 ms and then off for 100 ms, repeating three times.

-> 003h, 08Eh, 00Ah, 00Ah, 000h

(3) Alert tone



Outputs a 2016-Hz tone by turning it on for 50 ms and then off for 50 ms, repeating five times, after which a pause of 1 s is inserted. This whole sequence is repeated infinitely.

-> 000h, 01Fh, 005h, 005h, 005h, 005h, 005h, 005h, 005h, 005h, 005h, 064h, 000h

4. Passing Data

Use the following variables to exchange data:

[Variable: GTONFLG] Tone generation flag

bit7 FTONON =0: Tone generation ended =1: Tone being generated

bit6 FTONIN =0: Initialized =1: Initialization requested

bit5 FTONNN =0: Tone off =1: Tone on

[Variable: GTONCOD] Tone number

5. Interrupts

- TC3 interrupts (10-ms cycle)

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