MLC650A

8-bit micro-controller with 512 dots LCD driver

Features

- 65C02-base single chip 8-bit micro-controller

- Operating voltage: 3.6V to 5.5V

- Memory :
  - Program ROM : 224K Bytes
  - Data RAM : 256 Bytes
  - LCD display RAM : 64 Bytes

- 32 input/output pins:
  - 24 I/O pins (P0, P1 and P2) for key input with wak-up and interrupt function
  - 2 I/O pins (P3.0, P3.1) can switch as sub-oscillator external connection pins
  - 6 output pins (P3.2~P3.7) can switch as LCD common pins (COM15~COM11)

- LCD driver output:
  - Max 32 segment × 16 common
  - 1/10 or 1/16 duty 1/5 bias driving mode
  - Build-in voltage regulator to generate fixed 3.0V VLCD for LCD driver

- Two current DAC output for voice synthesizer

- Dual-channel melody with programmable envelope

- Programmable sample rate for voice/melody function

- Three re-loadable 16-bit timers

- One serial input port built in

- Build-in dual oscillation circuit:
  - Ring oscillator up to 6MHz for main oscillator
  - 32768Hz crystal oscillator for sub-oscillator
  - Single or dual clock operation selectable by control register

- Build-in battery low detector circuit

Application Field

Hand-held LCD game

Education toy

Toy piano with LCD driver

MEGAWIN

General Description

The MLC650A is a low cost, high performance 8-bit micro-controller of MEGAWIN, which integrate an 8-bit pipeline CPU core, ROM, RAM, timers, LCD driver, I/O ports, D/A and system control circuits. The ROM can store voice, melody, data table and program. MLC650A can provide two build-in oscillators to compose dual or single clock mode. User can arrange the clock mode to minimize the power consumption. It is suitable for hand-held LCD game, education toy controller, LCD toy controllers, and other products.