

*8-Bit micro-controller with 1120 dots LCD driver*

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**Features**

- Single chip 8-bit micro-controller
- Operating voltage: 2.4V to 5.5V
- Memory :
  - ◆ Program ROM: 64K Bytes
  - ◆ Data RAM (stack RAM included) : 3328 Bytes (0000h ~ 0CFFh)
  - ◆ LCD RAM : 144 Bytes
- 20 input/output pins:
  - ◆ Dedicated I/O pins: P0[0:3]
  - ◆ Share pin I/O:
    - P0[4]/SEG[69]
    - P0[5:7]/SEG[66:64]
    - P1[0:1]/UART(TX, RX)
    - P2[0:7]/SEG[63:56]
    - P3[0:1]/SEG[68:67]/(SDIO, SCLK)
- Half duplex UART function
- Build-in Megawin e-flash interface
- Dedicated SPK pin for tone/DAC
- LCD driver output:
  - ◆ Max 70 segment × 16 common
  - ◆ 1/16 duty 1/5 bias driving mode
  - ◆ Build-in voltage regulator and pumper to generate LCD voltage for LCD driver
- ◆ 10 level programmable frame rate from 56.7Hz to 113.8Hz
- ◆ 16-level adjustable VLCD from 3.5 V to 5.75 V
- One 8-bit resolution DAC output
- Programmable sample rate for voice/melody function
- Two reloadable 8-bit timers
- Two dividers
  - One 14-bit divider with the clock source from sub-oscillator to generate a 2-Hz interrupt
  - One 7-bit divider with the clock source from main oscillator
- Build-in dual oscillation circuit:
  - ◆ Ring oscillator up to 5MHz at 3.6V – 5.5V
  - 4MHZ at 2.4V – 3.4V for main oscillator (Fosc)
  - ◆ 32768Hz crystal oscillator for sub-oscillator (F<sub>x32</sub>)
- Build-in 8-level battery-low detector circuit

## **General Description**

MLC852A is a cost effective, high performance 8-bit micro-controller of MEGAWIN. It integrates an 8-bit pipeline CPU core, 64KB ROM, 3328B RAM, two 8-bit timers, 1120 dots LCD driver, 20 I/O pins and other system control circuits into a single chip. MLC852A build in an UART interface circuit, which could

be used to system link with other devices. An e-flash interface is useful for the external memory application. The MLC852A provides a build-in oscillator as clock source. It is suitable for data bank product, hand-held game, toy controllers and other products' applications.