



# JEILIN Technology Co., Ltd.

## JL4220A Multimedia Controller

### General Description

JL4220A is a highly integrated multimedia controller targeted for Digital Photo Frame with digital LCD panel. It is capable of reading/playing the photo (JPEG), video (Motion JPEG), and audio (MP3/WMA) from memory cards and internal NAND Flash. All of your favorite digital photos can be played back in slide show or in still display while MP3/WMA music is playing back. There are various slide transition effect are added between each photo slide. All of above playback doesn't need the use of PC. It can read/write the files from/to different kinds of memory card such as USB Pen Drive, CF/Microdrive, SD/SDHC, MMC/MMCplus, MS/MS PRO, XD, and NAND Flash. Besides photo frame function, JL4220A can be used as USB Card Reader thru USB Device port (MassStorage).

### Features

- ◆ Embedded 8-bit 8051 MCU
- ◆ Hardware JPEG Codec
- ◆ PCM / ADPCM Audio Decoder
- ◆ MP3 / WMA Audio Decoder
- ◆ Image Process: Gamma Correction, Sharpness Adjustment
- ◆ NOR Flash / NAND Flash Boot
- ◆ Integrated RTC
- ◆ In-system Programming
- ◆ 216-pin LQFP (24x24mm)

#### Card Reader Interface:

- ◆ CF & Microdrive
- ◆ SD/SDHC/MMC/MMCplus
- ◆ MS (Duo)/MS PRO (Duo)
- ◆ XD
- ◆ SLC/MLC NAND Flash

#### Display

- ◆ Integrated TCON
- ◆ Digital (RGB565/666/888) LCD Panel
- ◆ Digital (Serial RGB) LCD Panel
- ◆ Small-size LCD panel with CPU Interface
- ◆ 8-bit CCIR601/656 Output Interface
- ◆ PWM for LED Backlight or Charge Pump

#### Playback:

- ◆ Photo: JPEG, Progressive JPEG, BMP
- ◆ Audio: MP3 with Lyrics, WMA
- ◆ Video: Motion JPEG
- ◆ Combo Playback: JPEG+MP3/WMA

#### USB:

- ◆ High-Speed USB 2.0 Host port
- ◆ High-Speed USB 2.0 Device port
- ◆ MassStorage Class

#### Peripheral:

- ◆ IR Remote Control, Buttons
- ◆ SPI, I<sup>2</sup>S, I<sup>2</sup>C Interface
- ◆ ADC for low battery detection

### Basic Applications

- ◆ Digital Photo Frame (DPF)
  - Viewing Photos (JPEG/BMP)
  - Viewing Movie (Motion JPEG)
  - Listening to MP3/WMA music
- ◆ USB2.0 Card Reader
- ◆ DPF with Clock/Calendar/Alarm

### Functional Diagram

