

### Features

- ◆ Internal storage free MP3 player solution
- ◆ Access external USB storage device MP3 songs and playback
- ◆ On-Chip USB On-The-Go host and device controller module
- ◆ Compliant with OTG specification and USB specification version 2.0 for full-speed (12Mbps) USB hosts and devices
- ◆ Operate as host or peripheral in point-to-point communication with USB function
- ◆ Support USB Mass Storage Compliant Devices
- ◆ 256 bytes ping-pong FIFO for host and device controller transactions
- ◆ Integrated USB transceivers and pull-up/down resistors
- ◆ Low power reset and internal power on reset
- ◆ CSM6x51 – high performance turbo mode 8 bit 8051 compatible MCU core
- ◆ Companion with CSA3001 MP3 decoder to form a complete MP3 player solution
- ◆ LQFP-100 pin small outline package

### Introduction

The CHESEN CSC1220 USB On-The-Go (OTG) with MP3 interface controller is an integral micro-controller solution for MP3 player application. The CSC1220 innovative designed make use of the up-to-date USB-OTG technology to perform a MP3 player slim and embedded memory free. It can accept any kinds of USB storage devices compliant with Mass Storage Device Class via the embedded OTG module, e.g. USB flash disk. The media now can be accessed with free of internal memory, you can enjoy the MP3 free and direct via various kinds of resource now.

### About USB-OTG

USB OTG is a new supplement to the USB 2.0 specification. It challenges the capability of existing mobile devices and USB peripherals by giving them an added host capability for connection to other USB devices. These new features were needed to upgrade standard USB technology for mobile, peripheral devices and gateway bridge. These new features include the additional host capability, smaller connectors, and low power output, which eliminate the current limitation in the USB that requires a PC to act as host.

### Specifications

#### CSM6x51 8-bits Controller Core:

- ◆ 8 bits 8051 compatible MCU core
- ◆ Turbo mode with 2 clock per machine cycle
- ◆ 12MHz external ceramic resonator
- ◆ 24MHz internal CPU clock
- ◆ Two 16-bits timer
- ◆ Support power saving mode
- ◆ Built in power on reset with watchdog function

#### Memory:

- ◆ 64K byte internal ROM
- ◆ 256 byte internal RAM
- ◆ In-chip 12K byte external mode data RAM
- ◆ Internal or external program ROM support (ISP function for firmware update can support by external flash)

#### USB OTG Module:

- ◆ Fully compliant with the USB specification Rev. 2.0 (full-speed) and OTG supplement Rev. 1.0a
- ◆ Support 4 endpoints for bulk, interrupt and control transfer
- ◆ 128 bytes ping-pong FIFO for endpoint 2 and 3 for USB bulk transfer, the others with 64 bytes FIFO buffer
- ◆ Supports Suspend, Resume and Wakeup features
- ◆ Integrated USB transceiver
- ◆ Support USB 1.1/2.0 Mass Storage Compliant Devices: included flash disk, card reader, portable hard disk etc.

#### MP3 Interface:

- ◆ Support serial/parallel bit stream type MP3 decoder CSA3001 interface
- ◆ Search all MP3 files format in the target devices
- ◆ Support MP3 bit rate from 32K ~ 320K

#### Miscellaneous and User Interface:

- ◆ Support file system of FAT12, FAT16, FAT32 with multi-partition and multi LUN
- ◆ 6 Function Buttons for Play/Pause; Forward; Rewind; Volume Up; Volume Down; Reset
- ◆ 2 Switch for Power; Hold
- ◆ One Status LED for System On, Pause/Idle and Play status
- ◆ Option LCDs for USB device and MP3 detection
- ◆ Programmable GPIOs with interrupt for customized user defined or LCM display applications

### Applications

Portable MP3 Player

Audio System with MP3 Playback

Embedded System with MP3 Playback

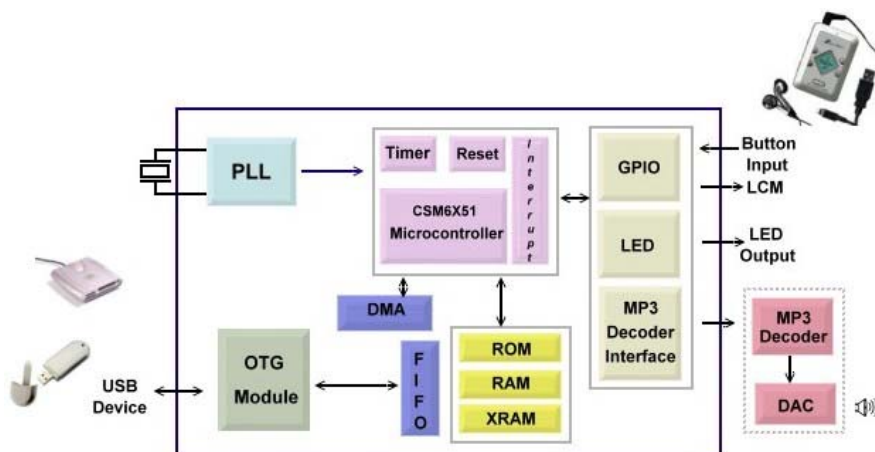
### Part Number

CSC1220-L100

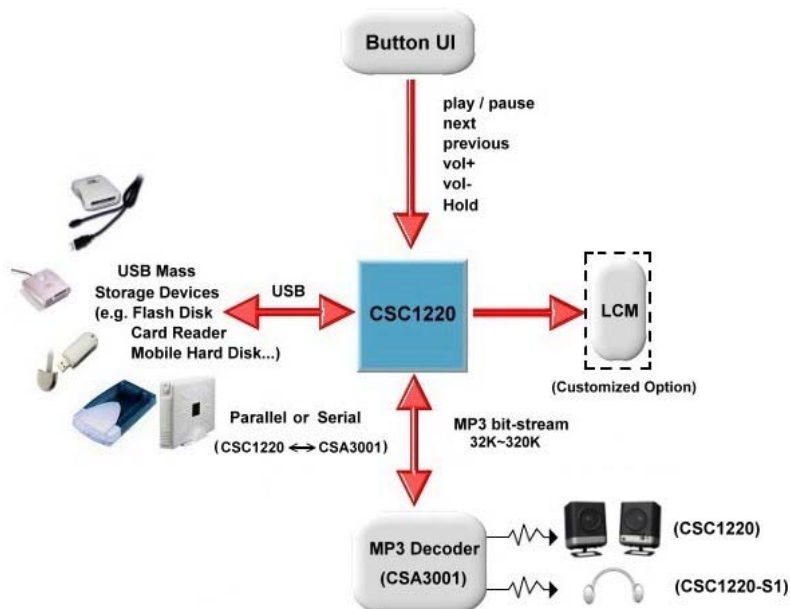
USB-OTG MP3 Controller (Suitable for Audio System with backend. ex. Speaker, Car Audio...)

CSC1220-S1L100

USB-OTG MP3 Controller (Suitable for earphone devices. ex. Portable MP3 Player, Workman...)



CSC1220 Functional Block Diagram



CSC1220 Typical Application

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