

Solid State System SSS1130 Gsound Controller

Dual Mode MP3 Controller with Class D AMP

Overview

The SSS1130 is designed to provide USB audio application with MP3 decoding and IMA-ADPCM encoding/decoding capability in a single chip solution. SSS1130 features a high performance class-D audio amplifier, 14bits mono ADC, 16bits stereo DAC, SD/MMC interface, and USB 2.0 high speed controller and PHY, which enable a wide range of USB audio applications such as portable music player, voice recorder, USB audio, and USB mass storage, and other related products.

SSS1130 also features 3S's patent pending technology – Dual mode operation and 2-way recording. Dual mode design can make SSS1130 a USB audio device when connected to PC, or a standalone audio controller with playback function when use it individually. While performing 2-way recording to store audio data into SD card, the audio data stream can be derived from USB host, from MIC to USB host, or in a mixed formation.

The integrated MP3 decoder and IMA-ADPCM codec supports a variety of data stream. The SSS1130 also features an anti-pop structure to eliminate speaker's general pop noise issues. The SSS1130 supports 63 steps digital volume control and 10 band equalizer for MP3 playback. Furthermore, the embedded mono 16 bits power efficient class-D amplifier can provide direct speaker driving without DC blocking capacitor, which minimizes the requirement of external components to build up a USB speaker system, and makes SSS1130 the best solution for USB audio application with playback function.

Features

- 1T 8bits MCU
- Supports 2-wire serial EEPROM for user defined code
- USB 2.0 PHY & I/F that is compliant with
 - Human Interface Devices (HID), v1.1
 - Audio device class specification v1.0
 - High speed interface for mass storage class
- MP3 decoder that is compliant with ISO11172-3 layer III, ISO13818-3 layer III, and MP2.5
- IMA-ADPCM/PCM based wave file playback and recording
- Dual mode operation and 2-way recording (3S Patent)
- 14-bits ADC with AGC, PGA, microphone boost, microphone bias, and digital DC removal filter
- Mono 0.39W (@ 8Ω load) 16-bits class-D amplifier for direct speaker driving without DC blocking capacitor
- Stereo 16-bits, 7.7mW (@ 32Ω load) class-D earphone driver
- Programmable playback special effect
- Peripherals
 - SD 2.0
 - Master/Slave SPI bus
 - I2C
 - 2 x UART
 - GPIO pins
- Single 12MHz system clock input
- LDO regulator for USB 5V bus power
- COB and LQFP 128



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Highlights

- CPU : 1T 8bits MCU
- USB Audio
- USB 2.0 PHY
- Dual mode
- 2-way recording
- MP3 Decoder
- ADPCM Codec
- SD 2.0 I/F
- 14bits ADC
- 16bits DAC
- Class-D earphone driver
- Class-D Direct SPK out
- Microphone input
- Peripherals
 - I2C
 - SPI
 - UART

