



TE8802L

USB 2.0 High-Speed

**Pure-HD USB Audio
Streaming Controller**

Revision v2.0

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1. Description

TE8802L provides a very flexible USB2.0-based audio & multimedia solution. Interleaved 2-channel input and output with 16/24-bit resolution and 44.1/48/88.2/96/176.4/192K sample rate are supported.

TE8802L can be partitioned into 4 major blocks, which include the USB core, MCU processor, DMA control, and the peripheral control for I2S/I2C/SPI/UART/MIDI interfaces.

2. Features

USB2.0 High-Speed device supporting Audio Class v2.0

USB2.0 Full-Speed device supporting Audio Class v1.0

USB HID device supported for GPIO/ I2C/ SPI function

■ Audio Features

- USB2.0 Audio Class v2.0 and v1.0
- 2-Inputs support by one I2S pairs with 128/256 Fs.
- 2-Output support by one I2S pairs with 128/256 Fs.
- Adaptive/Asynchronous Mode supported
 - High-Speed mode support Adaptive/Asynchronous
 - Full-Speed mode support Adaptive only
- Resolutions support 16/ 24Bit with sampling rates support 44.1/48/88.2/96/176.4/192KHz
- Built in one IEC60958 professional 24 bit/96KHz S/PDIF RX, with I2S pins as well.
- Built in one IEC60958 professional 24 bit/192KHz S/PDIF TX, with I2S pins as well.

■ Peripheral Features

- One set of master I2C ports
- Two sets of standard MPU-401 compliant MIDI Tx/Rx pair by UART with pass-thru.
- One USART 0, master or slave clocked synchronous/asynchronous operation.
- Two SPI, master or slave mode supported.

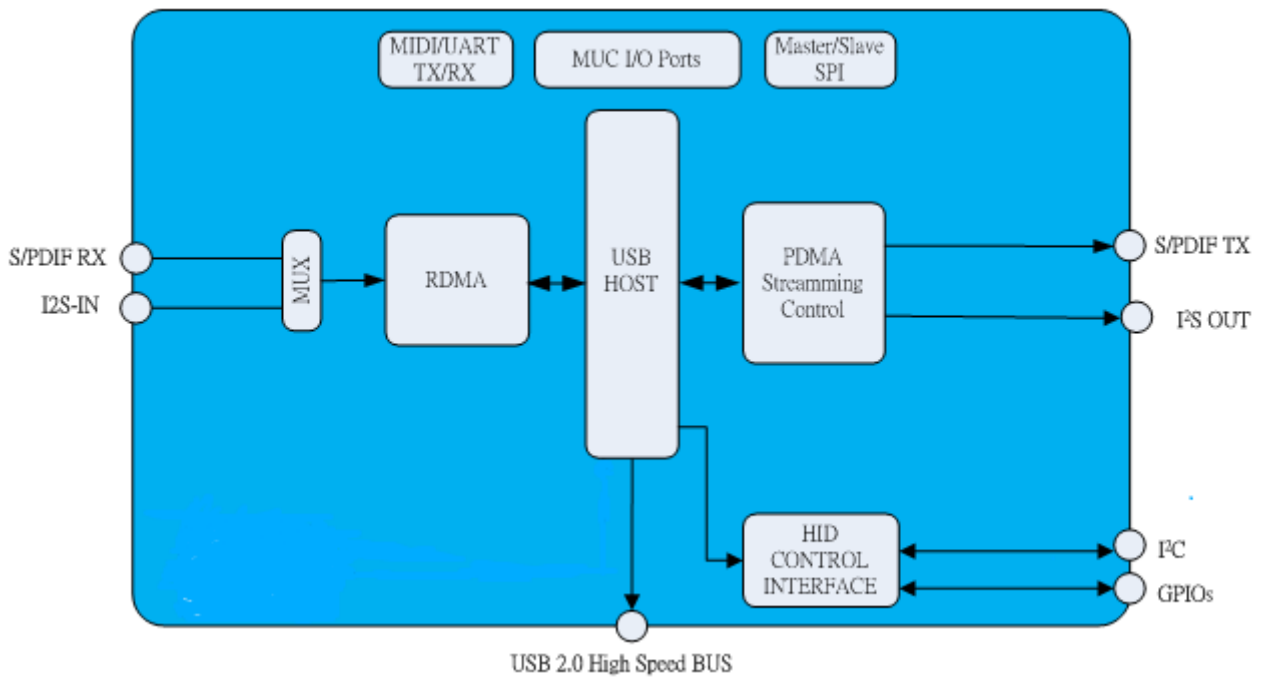
■ Other Features

- USB HID supported
- PLL integrated to support single 12MHz crystal operation
- Built in 1.8V LDO
- 1.8V core, 3.3V analog and I/O (3.3V tolerant)
- 0.18 um CMOS process
- LQFP-128

3. Applications

- USB DAC amp
- Hi-Fi Studio
- Musical Instrument
- Digital Audio Workstation

4. Blocks Diagram



- **Standard Operation Modes**
 - USB to SPDIF TX
 - USB to I2S Output (connect to DAC)
 - SPDIF RX to USB
 - I2S Input to USB (I2S connect to ADC)