

GENERAL DESCRIPTION

The UB2124 is a high performance 4 channel digital audio pulse width modulator with all the integrated functions that is needed for multi-channel audio amplifier system.

The UB2124 can accept any sampling rate and any format serial digital audio data from most popular Blu-ray, DVD decoders or audio decoders. The UB2124 has high performance sample rate converter and detects the sampling rate of digital audio input automatically and converts input rate to internal processing rate. This function guarantees constant PWM switching frequency at any input sampling rates. The UB2124 can handle up to four main channel inputs and two auxiliary channel input.

The UB2124 has 4 PWM outputs. The UB2124 supports four half-bridge or full-bridge configurations. The UB2124 provides high-quality, high-efficiency digital amplification conjunction with various power stages.

The UB2124 also includes many essential audio effect functions for multi-channel audio system. The effect functions include input mixing, equalizing, cross-over filtering, bass management, volume control, dynamic boost, automatic gain limiting and dynamic range control. The internal DSP unit allows high resolution processing of those functions.

The UB2124 can support the variable output rail voltage control proportional to the output level in order to reduce the heat of the power stage.

APPLICATIONS

Active Speaker, Sound Bars, Subwoofer

FEATURES

(Digital Audio Processor +Digital AMP)

- Digital input : Main 4 CH + Auxiliary 2 CH PCM Input (Master or Slave)
- On-chip Automatic Sampling Rate Converter
- Supporting Sampling Rate Range : **8kHz ~ 192kHz** for Main Input
- Speaker : **4 Channel** BTL PWM output
- Speaker Output with Various Output Stage
 - Selectable PWM Modulation Method (AD or BD) per CH
 - SNR : **> 110dB** (BTL Output, 1KHz, A-weighted)
 - **40kHz Audio Bandwidth**
- Input Cross Mixer for 4 each Internal Channels + 2 AUX Channel
- Main Volume Control : Mute, -80dB ~ +24dB (0.125dB step)
- Trim Volume Control : -24dB ~ +12dB (0.25dB step) per CH
- **12 x 2nd order Biquad Filters for 3 Groups, 4 channels** (**Flexible filter assignment from 0 to 31 Biquad Filters** per Group.)
- Bass Management Mixers for 4 each Channel
- **Fully Programmable Dynamic Boost Function**
- Programmable **3 Dynamic Range Control Group**
- Cross-over Filter & Output Mixer for **2-Band DRC**
- 2 Independent Output Level Monitoring Function
- **Multi-channel Output Control System for DRC and Power Supply Voltage Control (up to 4 Devices)**
- Single Power Supply Voltage : 3.0V ~ 3.6V
- 5V Tolerant I/O
- I²C Control Interface (**Selectable 4 Device IDs**)
- Internal X-Tal Oscillator Circuit
- Internal Programmable Low Jitter PLL (Internal Loop Filter)
- Package : **48pin QFN** (7mm x 7mm x 0.85mm, 0.5mm pin pitch) with exposed bottom pad

BLOCK DIAGRAM

