

GENERAL DESCRIPTION

The UB2120 is a high performance 2 channel digital audio pulse width modulator with all the integrated functions that is needed for 2 channel audio amplifier system.

The UB2120 can accept any sampling rate serial digital audio data. The UB2120 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 UB2120 has 2 PWM outputs. The UB2120 provides high-quality, high-efficiency digital amplification conjunction with various power stages.

The UB2120 also includes many essential audio effect functions for 2 channel audio system. The effect functions include input mixing, equalizing, cross-over filtering, volume control, dynamic range control. The internal DSP unit allows high resolution processing of those functions. The UB2120 also provides power supply voltage control.

The UB2120 can support the variable output rail voltage control proportional to the output level in order to reduce the heat of the power stage.

APPLICATIONS

Wireless Active Subwoofer, Active Speaker, Sound Bars

FEATURES

(Digital Audio Processor +Digital AMP)

- Digital input : 2 CH PCM Input (Master or Slave)
- On-chip Automatic Sampling Rate Converter
- Supporting Sampling Rate Range : **8kHz ~ 192kHz**
- Speaker : **2 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 Mixer
- Main Volume Control : Mute, -80dB ~ +24dB (0.125dB step)
- Trim Volume Control : -24dB ~ +12dB (0.25dB step) per CH
- **18 x 2nd order Biquad Filters**
(Flexible filter assignment from 0 to 31 Biquad Filters.)
- EQ Output Gain Control : Mute, -45dB ~ +18dB (0.5dB step)
- Programmable **3 Dynamic Range Control Group**
- Cross-over Filter & Output Mixer for **2-Band DRC**
- Final DRC after Output Mixer
- **Power Supply Voltage Control**
- 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 : **32pin QFN** (5mm x 5mm x 0.85mm, 0.5mm pin pitch) with exposed bottom pad

BLOCK DIAGRAM

